**Pursuing Enterprise Risk Management: A Local Roadmap for Canadian Health Care
Leaders**

by

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for the degree of Master of Science – Health Services Research**

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University of Toronto**

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Abstract

An in-depth analysis of organizational risk management in health care, and in particular the concepts of Enterprise Risk Management (ERM), has identified a five part model that can be used by Canadian health care leaders as an evidence supported approach to successful organizational risk management. *The Model for Organizational Risk Management* has been developed as a basis for linking the components of an ERM framework into a Canadian health organization in order to overcome the barriers that commonly disrupt strategic risk management. The Model addresses how an ERM framework can fit within an existing health organization by building off of and enhancing existing processes and resources in order to ensure familiarity, acceptance, and sustainability of the risk management program. By approaching the Model in a stepwise fashion (based on individual organizational context) health care leaders are provided with a roadmap from which to advance their own organizational risk management program.

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1.0 Introduction

In the broader business community, organizational risk management programs have been shown to be a highly effective way for senior leadership teams to capture, assess, and manage risks across the breadth of an enterprise. By taking a coordinated approach to managing risks, organizations are able to detect risks earlier, devote time and expertise to understanding the nature of issues, and promote timely and informed strategic decisions in line with the overall values and mandate of the organization. Successful organizational risk management involves the combined skills and talents of not only the senior leadership team, but also (and more importantly) the pooled expertise and abilities of individuals throughout the organization within a defined enterprise-wide risk management framework. The enterprise risk management framework is the underlying methodology that serves as the shared approach to treating risk throughout the organization. When applied strategically, organizational risk management provides senior executives with the ability to: align risk appetite and strategy, enhance risk response decisions, reduce operational surprises and losses, identify and manage multiple and cross-enterprise risks, and improve deployment of resources (human and financial) (Brazeau, 2008). Overall, an enterprise-wide approach to managing risks expressly demonstrates a commitment to effective governance and stewardship of resources.

Looking beyond the broader business context, Canadian health care leaders have long sought ways to address the many facets of risk present within a health care organization. These efforts have traditionally focused on specific services or functions of the organization and in many cases (and for understandable reasons) emphasized patient care situations. While providing health care leaders with a general awareness of potential risks, these traditional risk strategies have the

inherent weakness of failing to recognize the interconnection of risk and decision making amongst the multiple functions of the organization (Jeffs et al., 2006). In absence of a unifying approach to assist senior leaders manage risk across the organization, strategic decision making and effective outcome generation becomes extremely problematic, especially as health organizations become increasingly more complex in terms of size and scope. These challenges are illustrated by the following example.

In March 2007, the Medical Officer of Health (MOH) of the East Central Health Region issued a Public Health Order affecting St. Joseph's General Hospital (Vegreville, Alberta) that closed the Central Sterilization Room and ordered that admission of inpatients cease. The MOH had reason to believe that inadequately sterilized medical equipment had been, and up until that point continued to be, used in St. Joseph's, thereby potentially exposing patients to blood borne pathogens (Health Quality Council of Alberta, 2007). Considerable public fallout ensued, and a third party Root Cause Review was initiated. Findings from the review identified a) wide spread awareness of these issues by senior hospital and regional officials, and b) the existence of a critical inability by those in accountability roles to address these risks despite knowledge thereof. The aftermath of this situation culminated with the dismissal of the Health Region Board and many senior administrators, including the CEO; as well as some erosion of confidence in the local health system.

As the above example suggests, there seem to be problems at play among the mechanisms of risk awareness, informed strategic planning and decision making. Examples such as this are unfortunately prevalent in health organizations, as health leaders continually grapple with how to

identify, manage, and avoid all types of risks within a very complex (and increasingly unforgiving) public social structure. While the primary goal of senior leadership should not be to simply ‘stay off of the front page’ when it comes to risks, it is not difficult to understand the frustrations that exist for health leaders who already devote considerable resources towards planning, quality improvement, patient safety, financial accountability and general risk management. This leads health leaders to question whether these processes are working, or even whether modern health organizations are capable of anticipating or preemptively heading off seemingly obvious issues. Unfortunately, the reality faced by Canadian health organizations and their leaders is exceedingly more complex, requiring carefully considered and targeted solutions if improvements are to be achieved. Enter the concept of *Enterprise Risk Management*.

With its origins in the financial world (and considerably renewed in this context with the recent international financial collapse), Enterprise Risk Management (ERM) at its core is the combination of “*planning, organizing, leading, and controlling the activities of an organization in order to minimize the effects of risk on an organization. Enterprise or organizational risk management expands the traditional risk function to include not just risks associated with accidental losses, but also financial, strategic, operational, and other risks*” (Steinberg, 2004, p. 17). While defined in a logical manner, *ERM* should more accurately be seen as the intended destination or outcome rather than strictly the transport vehicle to that objective. In other words, ERM is most properly viewed as an organizational goal that deliberately incorporates the sum total of its risk management activities with intentional and strategic coordination so as to encompass the entire business.

Over the last number of years, numerous approaches to ERM have been developed and commercialized in the broader business context. However, given health care's complexity and constant context of change, off-the-shelf or broader business approaches to organizational risk management do not appear to necessarily fit or adequately address the needs of the public health system in a way that is meaningful. Where attempts at ERM have been introduced into health care, common approaches have tended to impose a pre-packaged solution into the management process. While this may in some cases lead to positive outcomes, this pre-packaged type of program implementation is considerably less successful than one that intentionally recognizes that a health organization is distinctive and built on the unique personal talents and skills of staff. Evidence from the Canadian health system has shown that where organizational risk management has been successful, it is due in large part to a program developed within the organization instead of for the organization. In this way, local processes, talents, challenges and expectations remain foremost, with knowledge and sustained commitment to the risk management process intentionally fostered into the ERM approach. The key is to find the correct balance between risk management as a function versus an integrated organizational destination.

Evidence to date (Behamdouni, 2010; Sandrik, 2010; Ceniceros, 2008) suggests that Canadian health care is at a precipice in terms of ERM, either ready to climb the rock face – or barely hanging on. Many organizations realize that their risk strategies no longer address the mounting pressures now openly being placed on boards and senior executive teams who are expected to demonstrate a comprehensive risk strategy as stewards of the public purse. It is no longer acceptable for organizations to merely purport to manage risks, as the tolerance for crisis leadership – or the appearance of unpreparedness – has evaporated. Healthcare-based ERM must

look beyond program silos and not only provide a snapshot of the current challenges, but rather a portrait of emerging trends, likely pressure points, and strategic opportunities. Common sense, supported by leading research (Jardine et al., 2003; Ackermann et al., 2003; Bazzoli et al., 2004), prescribes that truly comprehensive risk management practice needs to be built-up from within the organization based on tested methodology that (in a practical way) contemplates the common barriers that often derail efforts at organizational risk management. Overall, it cannot be overstated that the most effective risk management processes acknowledge the unique idiosyncrasies of the organization, tap into existing programs and techniques, understand and address key management challenges to risk program success, and most of all, build on the strengths of its own people.

2.0 Thesis Objectives

The aim of this thesis is to better understand the barriers that prevent health executives from making informed and timely decisions related to identified risks and provide specific guidance on how organizational risk management can be implemented in healthcare. This thesis is premised on the belief that: 1) risk can be both detrimental and opportunistic in nature and therefore needs to be managed, 2) current risk management methods can be improved by understanding and addressing common organizational challenges, and 3) there is value in working towards an organizational risk model that purposefully links risk management processes with timely strategic planning and decision making.

The main issues of this thesis relate to the following key study questions regarding the barriers to effective risk management and informed strategic planning in health care:

1. *What causes identified risks to be ignored in health care?*
2. *How is perceived inaction justified?*
3. *What information and risk management process is required to strategically manage identified organizational risks?*
4. *How should the awareness of risk be translated into the strategic planning process?*

The objectives of this thesis are to:

- Identify the common barriers to effective risk management and informed strategic planning in health care.
- Evaluate and critically assess how risk management and strategic planning initiatives can be more effectively linked to the decision-making process.

- Assemble a clear methodology for critically assessing and comparing the viability of various risk management frameworks (or other defined approaches for managing risks as part of an overall health organization risk management strategy).
- Develop an overarching organizational risk management model that addresses identified barriers, links together existing processes and stakeholders, and provides health care leaders with an approach from which to foster strategic risk decision making.

3.0 Research Methodology

The philosophical basis of this thesis is that of a pragmatic approach, which maintains that outcomes arise out of actions, situations, and consequences, with a focus in particular on what works in a practical setting. With a pragmatic view, emphasis is placed on the research problem (or contextual issue) and the use of all approaches and information available to understand the problem (Creswell, 2008). With this premise, a mixed methodological approach was selected to study and better understand the barriers to effective risk management and informed strategic planning in health care. This process of research is characterized by emerging questions and procedures, data collected in the participants setting, data analysis inductively building from particulars to themes, and the researcher making interpretations of the meaning of all available information (Creswell, 1998). Use of mixed methods offers an attractive means to study local health organization processes, gather perceptions from stakeholders, make comparison to broader literature findings, and synthesize resulting learnings into an approach that equips health leaders with information on what will work in a practical health care setting (Creswell, 1998). The strength of a mixed methods approach in this study is that it allows contextual, real-world experience of the challenges facing health care leaders to be captured, thereby contributing to the broader engagement of individuals in the study of this issue, which, if maintained throughout the process, serves as a key interface to any future change management or coordinated implementation that is built on key learnings.

This mixed study design consisted of three key stages (see Figure 1) that were structured by the thesis author in consultation with thesis academic mentors, based on a review of mixed methods research designs (Patsopoulos, 2011; Creswell, 2008).

Stage 1: Literature Review

In Stage 1, a comprehensive literature review was conducted to determine a) what the prevalent barriers are to effective risk management and strategic planning, b) what evidence exists concerning effective risk management and strategic planning (and the most common gaps in implementation), and c) current knowledge of strategic planning and risk management governance models. This stage involved the use of a research librarian as well as predetermined search methodology developed to find peer reviewed literature and related case study organizational documents. Key word searches utilizing condensed search terms (or MeSH Terms) of broad electronic sources (including grey literature), were undertaken and assessed against preselected criteria that ranked the findings based on: 1. Relevance to Problem, 2. Study Design, 3. Setting (Context / Applicability to Problem / Transferability), 4. Flaws or Limitations, 5. Relevance of Findings, and 6. Overall Quality of the Study. This approach provided insight into what causes identified risks to be ignored as well as perspectives of how awareness of risks can be translated into the strategic planning process. Using the above, 71 (out of 357) citations

found were reviewed in depth. Of the 71 primary sources, consultation with thesis mentors (chosen based on their familiarity with risk and planning process assessment and expertise in health system modeling – see Appendix 8) and review using the criteria above, refined the literature to 25 key papers; the strongest evidence being a systematic review by Jardine et al. (2003). Other strong evidence came from literature on broader business experiences, as well as the local survey responses from health leaders.

Stage 2: Structured Survey

The findings from Stage 1 served as the foundation of Stage 2, which consisted of a structured investigation into the perceptions and experiences of a group of senior health care leaders from an integrated health organization (termed the ‘Study Organization’).

Study Organization

Situated in central Alberta, the Study Organization at the time of the survey was the third largest provincial health region by population, serving nearly 300,000 residents and employing over 9,000 staff and physicians. Operating 45 health facilities with an annual budget of over \$600 million, the Study Organization was governed by a 12 member board of directors appointed by and responsible to the Government of Alberta and administered by a senior executive team accountable for the comprehensive service delivery for this geographic area. The Study Organization was chosen as a focus for this thesis because of: 1) its leading western Canadian reputation for sustained and strong leadership (Alberta Health & Wellness, 2007); 2) its strategic mandate (including full board and senior executive leadership and resource support) to pursue the evidence informed design and deployment of an organizational risk management program; 3)

its broadly representative size and integrated service delivery characteristics which are widely transferrable (in whole or part) to almost any Canadian health care setting (i.e. both urban and rural settings as well as a full care continuum [cradle to grave] service scope); and 4) the ongoing availability and willingness of senior health leaders to actively participate in the thesis project with the explicit recognition that this work has applicability to the broader Canadian health sector. The above noted support of the Study Organization included funding this thesis through the Executive Training for Research Application (EXTRA) Fellowship Program of the Canadian Health Services Research Foundation – a national Canadian research partnership between the Government of Canada, Provincial Governments and academic institutions such as the University of Toronto (as well as other research and professional institutions (Nicklin & Stipich, 2005)). The thesis author was a member of the senior executive team of the Study Organization and accountable to the Chief Executive Officer and Board for the corporate and governance support function, including development of a comprehensive organizational risk management program. It is through this mandate that the thesis was conceived and researched; utilizing the characteristics and support of the Study Organization.

Study Organization Survey

Within Stage 2, a 44 question survey consisting of a mixture of numerical and open ended questions was administered to the Study Organization (see Appendix 1). Questions within the survey were directly linked to the underlying problems and issues identified in the thesis, with each question supported by observations reported in the literature. In this way, the survey tested both the local experiences within the Study Organization and the findings from existing research. The survey was administered to: 1) the senior management team of the Study Organization

(n=15), and 2) senior personnel within the Study Organization identified as having primary responsibility for oversight of risk management or strategic planning activities (n=10). This combined group (n=25) was contacted via email and asked to participate in an electronic survey in accordance with an approved research ethics protocol (see Appendix 2 and below). The survey, collected data, and data analysis was supervised by health care researchers familiar with this thesis design and type of analysis from the University of Alberta and University of British Columbia (see Appendix 8). 22 individuals out of the 25 identified target group completed the survey (response rate = 88%).

Survey Development

Stemming from the comprehensive literature review undertaken in Stage 1, in which the evidence findings were ranked (based on Relevance to Problem, Study Design, Setting [Context / Applicability to Problem / Transferability], Flaws or Limitations, Relevance of Findings, and Overall Quality of the Study), the evidence was further sorted based on the 4 key thesis study questions. Review of this sorted evidence identified some preliminary thematic findings (which ultimately produced the key findings listed in Appendix 5). At this stage of the thesis, it was then possible to take prominent evidence findings from the literature and test them against the survey population from the Study Organization. For example, Jewell & Bero (2008) reported that health care leaders are often limited by time constraints when it comes to addressing risks. Similarly Minsky (2007) found that accountability for risk management was often unclear in the organization. Both of this evidence (for example) relates to the key thesis question of '*what causes identified risks to be ignored in health care?*' and these (and other) findings were then tested within the survey wherein respondents were asked to express their degree of agreement

with the finding (see Appendix 3 question 1 and 2). In this fashion, the preliminary (at this stage) evidence findings were directly built into the survey (using a mixed methodology (Cresswel, 1998)) from which a further relationship (using the Study Organization as a proxy) could be looked at and directly related to the Canadian health care context. In composing the survey, each survey question was based on the ranked and sorted literature evidence (establishing a general hierarchy of the evidence), which was further grouped by key thesis question, and then tested using the survey instrument. In designing the final survey instrument, questions were prioritized based on the nature of the evidence finding and its perceived relevance to the thesis. The survey, prior to distribution, was field tested for appropriateness of content and design (including ease of use) by knowledgeable health care risk management professionals in the Winnipeg Regional Health Authority, as well as academic researchers at the Universities of Alberta and British Columbia. The survey was then administered according to an ethics approved strategy (discussed further below). Resulting survey responses were then compared to the literature evidence (see Section 4.0 of this thesis) generating combined overall key findings supported by the literature and organizational context (see Appendix 5).

Survey Ethics and Deployment

Utilizing the University of Alberta Faculty of Arts, Science & Law Research Ethics Board, application for ethics approval for the survey (as well as this overall thesis) was obtained (see Appendix 2). As set out in the study design, the identified cohort (n= 25) from the Study Organization were contacted via email using the Study Organization listserv (email data base) with an information letter (see Appendix 2) that included a brief introduction to the study, its purpose, and an invitation to participate in a web-based survey. Potential participants were asked

to contact the thesis author via e-mail. Once contacted, the thesis author generated a return e-mail message containing a further explanation of the study containing a link to the on-line survey. The email had a link to the web-based survey, created using the software program Survey Monkey (see Appendix 1). A copy of the original email from potential participants was kept as proof of consent. In addition, all information reiterated that completion of the survey will imply consent. The survey consisted of 44 likert scale and binomial questions designed to take approximately 30 minutes to complete. All responses were confidential. The initial e-mail was sent to the sample population at the end of the first week of April, 2009. A follow-up email was sent to those potential participants who had not yet responded at the end of the first week in May, 2009. The survey closed on June 1, 2009.

Stage 3: Model Formulation

In the final stage of the study (Stage 3), the evidence from the first two stages served as an informed basis for constructing an organizational risk management model. Specifically, the data was characterized according to major conceptual constructs derived from the literature and compared thematically to identified challenges, barriers, sustainability, positive/negative effects, and viability of organizational risk management models for strategic decision making within a Canadian health care setting (see Appendix 5). The resulting Model translates the key findings of the preceding stages and uses the accumulated evidence to construct a roadmap for health care leaders to follow when considering ERM.

Throughout the three stages of this thesis, the importance and critical nature of stakeholder engagement was expressly built into the methodology; as it is the individual health care leaders

who are the key contributors to not only the nature of the problem, but also the primary means of implementing change (Dobbins et al., 2007).

4.0 Literature and Survey Results From Stages 1 and 2

The first two stages of this thesis, in which peer reviewed literature, organizational documents, grey literature, and the survey of senior health care leaders was assembled, produced a combined body of evidence that directly related to the key thesis questions. In working towards synthesizing this information (to be able to apply it in the third stage of the project), the evidence, which consisted of the literature findings and the survey findings (see full survey results in Appendix 4) were grouped in to key themes and directly related to the thesis questions as illustrated by Figure 2. In this context, it is important to highlight that given the stepwise methodology of this thesis, it is most illustrative to discuss the combined literature and survey evidence at the same time, as they are intentionally highly intertwined and together directly address the key questions of this thesis.

Figure 2: Progression of Combined Evidence Results

In reviewing the combined evidence, five themes and twenty three corresponding key messages (now termed jointly as ‘key findings’) emerged as important results (see Appendix 5 and

corresponding figures below). The five themes are based on a combined review of the literature and survey results in which ranked literature (recall that as part of Stage 1 the literature was assessed based on defined criteria) was matched up with the survey responses (see Appendix 3). The results were then grouped by the thematic nature of the information and are now presented within the overarching context of the related thesis questions. When, in total, the thesis questions and five resulting key findings were compared, it was found that key finding themes 1, 2, and 3 related directly to the first two thesis questions, and that key finding themes 3 and 4 related to the third and fourth thesis questions (see Figure 3).

Figure 3: Relationship of Thesis Questions and Key Finding Themes

Thesis Questions	<ol style="list-style-type: none"> 1. <i>What causes identified risks to be ignored in health care?</i> 2. <i>How is perceived inaction justified?</i> 	<ol style="list-style-type: none"> 3. <i>What information and process is required to strategically manage identified risks?</i> 4. <i>How should the awareness of risk be translated into the strategic planning process?</i>
Key Finding Themes	<ol style="list-style-type: none"> 1. General Management / System Barriers to Organizational Risk Management 2. Local Organization Strategic Planning / Risk Management Barriers 3. Barriers to Risk Management within the Decision-Making Process 	<ol style="list-style-type: none"> 4. The Beneficial Use of Information / Evidence 5. Elements of Successful Strategic Organizational Risk Management

Review of Key Finding Themes 1, 2, and 3 within Related Thesis Questions 1 and 2

Thesis Question 1: What causes identified risks to be ignored in health care?

Thesis Question 2: How is perceived inaction justified?

Key Finding Theme 1: General Management / System Barriers to Organizational Risk Management

Figure 4: Main Evidence Messages 1 – General Management / System Barriers

1. Complexity of the health system fosters considerable opportunity for gaps in risk management processes to occur.
2. It is not intentional management inadequacy that causes risks to be ignored, but rather the combined effect of multiple system barriers that result in failed strategic risk management execution.
3. Translation of strategy into operations is an essential component of effective risk management.
4. Data, role uncertainty, reactionary leadership, political interference, competing interests on health leader time, and financial constraints/uncertainty, explain in general what leads to inaction/ineffectiveness of health leaders on identified risks.
5. Clarity within a defined framework, dedicated resources, targeted education and focused organizational strategy, should be the underlying premise of a risk management program.

Kaplan and Norton (2008) describe how an organization's management system (i.e. the integrated set of processes and tools that a company uses to develop its strategy, translate it into operations, and monitor and improve the effectiveness, quality and risk) is the main source of breakdown or barrier to effective organizational functioning. Further, Kaplan and Norton (2008) point to the management system, not a manager's lack of ability and effort, as a critical factor leading to unexplored opportunities and risks. Looking into the specific management processes where barriers exist, Kaplan and Norton (2008) found that strategy (and the strategic process) at

many companies is almost completely disconnected from execution. This creates a considerable gap, as the employees who are closest to customers and who operate processes that create value are unaware of the strategy and thus cannot help the organization implement it effectively or mitigate risks as they arise. These findings, as they relate to system impediments to the strategic process, are supported by the findings of Adams (2005), who also found that in many cases leaders have difficulty translating their strategic plan into specific actions (operations) because of a lack of clarity in what a strategic plan is and what it should do for the organization.

Barriers within the management system are described by other research as well. Brazeau (2008) found that questionable data integrity, unpredictable human performance, system financial impediments, un- or under-specified responsibility, over quantification of issues, and persistent reactionary leadership, all present barriers to effective management of risk. Brazeau (2008) also indicates that these traits are magnified by: fragmented decisions, competing interests, and the labour intensive nature of the health care system. Balding (2008) goes as far as concluding that it is difficult (if not impossible) to implement a systems approach to strategic risk management within a highly individualized health professional environment (encompassing countless sub-cultures, each with its own priorities, traditions, territories, rules and languages) without expressly acknowledging and engaging these groups on their terms. This is especially difficult given local / federal funding strategies, a bureaucratic system that can sometimes appear to be more about politics than patients, a bottomless demand fed by growing populations and rising community expectations fanned by public inquiries into sub-standard care, often justifying, if not explaining, inaction on key risks/challenges facing healthcare (Balding, 2008).

When asked, all of the survey respondents strongly agree or agree that health care leaders are often limited by time / workload (system) constraints, and that system / financial impediments were the most commonly reported barrier to effective / successful risk management (Appendix 4). Other specific systematic barriers that were commonly identified by respondents include: competing priorities on management / health leader time; lack of resources, expertise and time to be proactive on risk management; uncertainty on strategic direction, importance, roles, responsibilities and accountability for strategy and risk management; and the lack of a system-wide approach to risk management that is based on the overall strategy of the organization. These findings suggest that systemic challenges, in multiple forms within the management process, present a considerable barrier to effective organizational risk management. The survey highlights that almost half of senior health leaders felt that clear accountability for risk management was lacking in their organization, with over half of respondents expressing that they have identified risks that have not been acted upon. A further 52% of survey respondents expressed that it is very common or common for identified risks to be ignored or not addressed in a timely fashion. The survey also confirms that many barriers described in the literature (including inadequate education on risk management and strategic planning, inadequate/untimely information to make an informed decision, unclear or no set avenue or structure for risk decision making, poor communication of risks between silos, and uncertainty of individual roles within the risk process), are evident in the study health care organization.

The above findings are principally indicative of the published literature on systematic barriers to effective risk and health care management. As captured succinctly by Fraser (2008), the literature in general is largely silent on that one firm direction (i.e. a magic bullet) on how to deal

with the myriad of cultural, logistical, historical challenges that exist in the health system beyond exploring and addressing each of these issues head-on within the local organization. At best, research has suggested that direct involvement and coordination of as many stakeholders (internal / external) as possible to key organizational processes (such as risk management) has been shown as a way to address broader obstacles that arise in an organization (Smiechewicz, 2009; Neilson et al., 2008; Robertson, 2006; Pagach & Warr, 2007).

Key Finding Theme 2: Local Organization Strategic Planning / Risk Management Barriers

Figure 5: Main Evidence Messages 2 – Local Planning / Risk Management Barriers

1. The current health planning process appears ineffective and has resulted in some health leaders pursuing subsequent parallel processes (i.e. breaking the planning function into capital plans, health service plans, operational plans, etc.).
2. Strategic planning is not as effective with only a top down approach.
3. Risk management needs to be broadly approached and not siloed.
4. Health leaders see value in working towards an integrated risk planning framework.

The strategic planning process within the Study Organization is based on a rolling three year planning exercise that culminates with a yearly Health Plan that is submitted to government. The purpose of the Health Plan is to describe the structure, processes, intended strategy, and accountability between the Health Minister and the Study Organization (Corporate Operations Division Alberta Health & Wellness, 2007). The Health Plan is a legislated document that must meet the requirements set by government (including the prescribed form and structure), and serves as a conduit between government and the established lines of authority within public health delivery (Corporate Operations Division, Alberta Health & Wellness, 2006).

As reported by leaders of the Study Organization through the Survey, the main identified challenge within the health planning process is that it firstly appears to be a largely contrived exercise that has more to do with fulfilling legislative requirements than actual planning. As described by one survey respondent, the budgeting process is separate from the health planning process, which presents a considerable barrier as health leaders are expected to develop strategies without knowing if they will be funded. Secondly, Health Plans are based primarily on provincial versus local priorities (Alberta Health & Wellness, 2006). This serves to foster objectives and initiatives that are higher level in nature, without an extensive ability to explore local health service delivery priorities. Thirdly, the document is publically available, which causes health care leaders at both the ministry and Study Organization level to be cautious in terms of what specific information and strategies are included in the plan (i.e. broad strategy statements without much on the operational ‘how to’). This has caused Health Plans to become very generic in nature, and for the most part, removed much of the functional utility of the plan as a strategic document. Lastly, the health planning process arguably fosters gaps in planning and issue mitigation as it is a top down approach that does not emphasize communication or the identification of local or unique problems (or risks) for fear of perceived weakness of management. Within the Study Organization, these challenges led to multiple parallel processes evolving to fill the void in coherent strategic planning. For example, service plans, capital development plans, and operational plans all emerged as distinctly separate approaches health leaders use to plan service delivery.

Similarly, risk management processes are equally varied. A primary observation of survey respondents is that risk management has long been considered a function that is housed in

different silos depending on distinct service lines, rather than as a broad organizational objective. For example, within the Study Organization, risk management was traditionally viewed in the clinical care context, and was a longstanding part of the quality function (Alberta Health & Wellness, 2008). Other risk components were distributed across various portfolios, such as quality improvement, patient safety, legislative compliance, internal audit, insurance, and maintenance (Alberta Health & Wellness, 2008). This led to respondents commenting on the divergence of process, masking the overall risk profile of the organization.

Recognizing the value of a broad organizational approach to planning and risk management, the Study Organization determined that a combined framework was needed (which was the origins of this thesis). The issue is how to properly do this. In surveying senior health leaders, the following findings highlight the barriers to strategic planning and risk management, as well as offer insight into potential improvements.

- The strategic planning function should play an important role in risk management as a mechanism to ensure calculated mitigation of risks (100% strongly agree or agree).
- Risk processes are a key component of strategy and planning processes (90% strongly agree or agree).
- Risk management should focus on the risks to the entire organization (83% strongly agree or agree).
- Communication of risk issues is frequent, effective, and allows risks to be acted upon in a timely manner (76% strongly disagree or disagree).
- Accountability for risk management was clear in the organization (47% very common or common).

- I have identified risks that have not been acted upon (43% very common or common).
- Risks tended to be longstanding and known about locally but not necessarily acted upon (42% very common or common).

Key Finding Theme 3: Barriers within the Decision-Making Process

Figure 6: Main Evidence Messages 3 – Barriers within the Decision-Making Process

1. The pressure/demand to make quick decisions fosters fragmented/ineffective decision making.
2. Health care leaders desire strategic mechanisms that coordinate risk management / decision making.
3. The availability, assessment and application of information greatly influences the decision-making process.
4. Decision making (in general and within the risk management context) is best approached as a coordinated process rather than a series of independent events.

Clancy (2003) and Eisenhardt (2008) capture succinctly the reality that executives/decision-makers face tremendous pressure to be decisive and take action quickly. Further, rushed or forced decisions often lead to additional long term challenges as outcomes often take years to be fully felt (Clancy, 2003). These findings emphasize the importance of the decision-making process on effective risk management, as it is the decision-making process that plays a fundamental role in determining how to manage risks and set strategy through to successful conclusion. However, the literature, as well as local perceptions, suggests considerable challenges are inherent in decision making, which pose significant barriers to the risk management process (and broader decision making in general) if not strategically addressed.

Gavetti and Rivkin (2005) explain that faced with an unfamiliar problem or opportunity, senior managers often think back to some similar situation they have seen or heard about, draw lessons from it, and apply those lessons to the current situation. This has the potential to ignore (or not seek out) available evidence, and leads to poor decisions (Gavetti & Rivkin, 2005). Taking this further, Garvin and Roberto (2001) suggest that:

Most leaders get decision making wrong. The reason: most [leaders] treat decision making as an event – a discrete choice that takes place at a single point in time, whether they're sitting at a desk, moderating a meeting or staring at a spreadsheet. The fact is, decision making is not an event. It's a process, one that unfolds over weeks, months, or even years; one that's fraught with power plays and politics and is replete with personal nuances and institutional history; one that is rife with discussion and debate; and one that requires support at all levels of the organization when it comes time for execution (p. 113).

The process of decision making, as described by Garvin and Roberto (2001), appears to be central to good outcomes (i.e. effective decisions), however, other researchers as well as the survey respondents have emphasized further challenges. AbouZahr (2007) found that decision making is fragmented and decisions are sometimes difficult to make because of several players and interests, with high-level policy likely to support established power structures, core values and objectives of powerful elites. Survey respondents indicated (84% strongly agree or agree) that health care leaders are required to make quick decisions with limited evidence or supporting rationale. Clancy (2003) also observed that there is a great tendency in decision making to bypass a thorough analysis of the problem and move quickly to solutions.

As important as sound decision making is, many executives neglect to utilize any formal decision-making process (Clancy, 2003). Frei (2008) reports a basic yet fundamental challenge is that decision-makers do not have the time, inclination, or technical skills to analyze formally alternative options. Jewell and Bero (2008) further explain this phenomenon by indicating that administrators are not taught to continuously use research to inform their decisions or to inform practice, citing two key factors: research quantity (too few relevant studies) and research quality (poor quality, limited applicability, or difficult for decision-makers to evaluate). Teng et al. (2007) found that decision priorities were described by decision-makers as being set in an ad hoc manner, if made at all, with health resources generally allocated along historical lines reflecting organizational cultures where norms and incentives have implicitly supported historically based resource allocation processes. Hammond (1998) explored the origins of poor decisions and found that in many cases, bad decisions can be traced back to the way decisions were made: the alternatives were not clearly defined; the right information was not collected; the costs, benefits, and risks were not accurately weighed; or biases overtook the decision such as a strong tendency toward alternatives that perpetuate the status quo (e.g. seeking out information that supports existing instinct or point of view while avoiding information that contradicts it). This is reinforced by a considerable portion of survey respondents (42%) who felt health care leaders are not taught to use research to inform their decisions, and by the small portion (16%) who felt that health leaders have adequate education on strategic planning / risk management decision making.

Review of Key Finding Themes 4 and 5 within Related Thesis Questions 3 and 4

Thesis Question 3: What information and process is required to strategically manage identified risks?

Thesis Question 4: How should the awareness of risk be translated into the strategic planning process?

Key Finding Theme 4: Use of Information / Evidence

Figure 7: Main Evidence Messages 4 – Use of Information / Evidence

1. Health care leaders face challenges in accessing and/or linking evidence into the decision-making process.
2. The transfer of research evidence into risk management practice requires a coordinated and strategic process.
3. Mechanisms need to be established to link information, expertise and assessment with decision-makers.
4. Clear accountability for implementation and evaluation is required to determine if expected results have occurred.
5. Knowledge translation/transfer is an essential component of risk management.

Despite the considerable resources devoted to health sciences research, a consistent finding from the literature is that the transfer of evidence into practice is often a slow and haphazard process (Graham et al., 2006). Lavis (2006) has commented extensively on this and remarks that:

Public policymakers must contend with a particular set of institutional arrangements that govern what can be done to address any given issue, pressure from a variety of interest groups about what they would like to see done to address any given issue, and a range of ideas (including research evidence) about how best to address any given issue. Rarely do processes exist that can get optimally packaged high-quality and high-relevance research

evidence into the hands of public policymakers when they most need it, which is often in hours and days, not months and years (p. 39).

This is further described by Jewell and Bero (2008) who focused on four facets of information / evidence flow: a) research quantity – there are few relevant studies for many important health policy / risk issues, much less systematic reviews of evidence; b) research quality – sometimes existing research is of poor quality or limited applicability; c) accessibility – even when available, policy makers may have difficulty obtaining it or the fact that a large amount of data is never published, and d) usability – the most commonly cited reason attributed to limited usability of existing data was that policymakers’ needs do not drive research. In looking at the information or evidence requirements of decision-makers (within the risk management process and in general), survey respondents indicated that:

- There are very few relevant research studies for many important health policy issues or identified risks (62% strongly agree or agree).
- Data integrity was identified as a significant barrier to effective / successful risk management (57% of respondents).
- 53% of respondents strongly disagreed or disagreed that health care leaders often have the necessary information to make an informed strategic decision.
- 94% of respondents strongly agreed or agreed that risk management should be a process that takes into account all available data in the evaluation and review of risk management decisions.

The above findings emphasize that the use of information / evidence by decision-makers in processes such as (traditional) risk management is very fragmented and serves as a key barrier to

successful outcomes. Whereas there is a genuine (if not rhetorical) desire to make evidence-informed decisions, the process and linkage of evidence to the decision process is complex and requires a formal mechanism to link together internal and external stakeholders to allow / facilitate information flow and/or effective communication. While it is not expected that rigorous evidence will exist on every issue or risk that is presented, it is nonetheless important to ensure that information that is available is in no way impeded from decision-makers (Clancy, 2003).

Key Finding Theme 5: Elements of Successful Risk Management and Strategic planning

Figure 8: Main Evidence Messages 5 – Elements of Successful Risk Management and Strategic Planning

1. Enterprise Risk Management is a broad term that represents an organizational view of the risk process.
2. An enterprise or organizational approach to risk management can be implemented in a customized way within a health organization.
3. Key components that should be a part of a comprehensive risk management framework include: 1. Problem formulation, 2. Stakeholder involvement, 3. Communication, 4. Quantitative assessment, 5. Iteration and evaluation, 6. Informed decision making, and 7. Flexibility.
4. Risk management and strategic planning are interrelated processes that form part of the overall organizational decision-making process.
5. Successful and strategic risk management relies on an understandable framework that is supported by senior leaders and implemented across the organization in a principled / ethical way.

As a core component of the thesis, critical review and appraisal of risk and planning models took place. What was observed was an increasing number of organizations (initially non health related, but now more so) that appear to be addressing ineffective strategic planning and risk

management by way of one of many enterprise risk strategies intended to ensure corporate governance accountability (Kaluzny, 2007; Hexter, 2008). Appendix 6 provides a small representation of the various ERM Frameworks available to the Study Organization. ERM stems from many of the quality assurance and risk identification strategies previously in place in business, with the added viewpoint of uniformly assessing risk across all parts of an organization so that leaders can make effective decisions, thus expanding (or overcoming) the traditional siloed approach to risk management (Balding, 2008). Investigation of ERM has highlighted that there seems to be multiple approaches to risk management and strategic planning, warranting a due process of assessment prior to contemplating an organizational approach.

The systematic research of Jardine et al. (2003) highlights the differences, commonalities, strengths, and weaknesses among various common risk management approaches, and identifies core elements that should be included in an effective, current, and comprehensive approach to risk management. Based on the extensive review of more than 80 frameworks (which included both non health industry and health industry [in the traditional sense] risk approaches), Jardine et al. (2003) reported seven key elements that when applied together make up a successful and comprehensive risk management framework, specifically:

1. Problem formulation
2. Stakeholder involvement
3. Communication
4. Quantitative assessment
5. Iteration and evaluation
6. Informed decision making, and
7. Flexibility.

When explored for how a particular framework approaches risk, these seven elements then become an informed basis for reviewing the strength of a particular risk management framework. In addition to these seven key elements, Jardine et al. (2003) demonstrate that comprehensive and sound principles are critical to providing structure and integrity to risk management frameworks. Guiding principles are intended to provide an ethical grounding for considering the many factors involved in risk management decision making, and Jardine et al. (2003) propose ten principles to guide strategic risk management decision making. As risk management is inherently a process in search of balance among competing interests and concerns, each risk management decision will be a balancing act of competing priorities, and trade-offs may sometimes have to be made between seemingly conflicting principles. The 10 decision making principles (with corresponding ethical principles in italics) are:

1. Do more good than harm (*beneficence, nonmalifcence*).
2. Fair process of decision making (*fairness, natural justice*).
3. Ensure an equitable distribution of risk (*equity*).
4. Seek optimal use of limited risk management resources (*utility*).
5. Promise no more risk management than can be delivered (*honesty*).
6. Impose no more risk than you would tolerate yourself (*the Golden Rule*).
7. Be cautious in the face of uncertainty (*“better safe than sorry”*).
8. Foster informed risk decision making for all stakeholders (*autonomy*).
9. Risk management processes must be flexible and evolutionary to be open to new knowledge and understanding (*evolution, evaluation, iterative process*).
10. The complete elimination of risk is not possible (*life is not risk free*).

When the seven key framework elements highlighted above are combined with the 10 decision making principles, what is achieved is a comprehensive review mechanism for potential ERM frameworks from the strategic planning and risk management context (this is discussed further below in section 5.0).

Other research has confirmed the findings of Jardine et al (2003). For example, Eisenhardt (2008) identifies that managers need tools and a clear risk management framework in order to make decisions inclusive of: real time operating information from which to compare multiple alternatives, quick conflict resolution, advice and integration of decisions and tactics to build confidence to make decisions. Jeffs et al. (2006) take this further and suggest that what is required is a system that includes a combination of internal stakeholders throughout the strategic planning process, balanced with external review and consultation. Jeffs et al. (2006) also expand on the concept of informed decision making and propose that a process for transformational change and knowledge transfer is essential in order for evidence to be effectively used. Brook (2008) also touches on the importance of knowledge and evidence use within the risk management approach and postulates that key requirements include: obtaining data necessary to understand the issue, presenting options in an unbiased manner so that they inform debate, and involving the public in understanding the issues and developing responses. Kaplan and Norton (2005) look at risk management from the context of a key component of corporate execution of strategy and specify that a successful framework requires: clear communication of intended organizational values and strategy; processes to ensure enterprise level plans are translated into the plans of the various units and departments; alignment of employee competencies, skill sets, goals and incentives; and a clear understanding of the overall objectives of the framework – from

the senior board level through to the front line. Overall, Kaplan and Norton (2000) emphasize the key to executing a strategy or framework is to have people in your organization understand it – including the crucial but perplexing processes by which intangible assets will be converted into tangible outcomes.

Information stemming from the survey also highlights key elements that should be a part of a comprehensive risk management framework from the Study Organization context. Risk management should focus on the risks to the entire organization (83% strongly agree or agree). Effective risk management considers both the internal and external organizational environment (100% strongly agree or agree). An effective risk management framework provides key principles and concepts, a common language and clear direction and guidance to an organization (100% strongly agree or agree). Risk processes are a key component of strategy and planning processes (90% strongly agree or agree). Risk management should be a process that takes into account all available data in the evaluation and review of risk management decisions (94% strongly agree or agree). Other essential components of a risk management program include (open ended):

- Ongoing executive and Board support
- Focused and ongoing communication (both up and down).
- Data collection/management system dedicated resources to support program and organizational risk assessment.
- A clearly defined framework that supports: identification of risk, full understanding of risk issues, prioritization of risk, research of best practice, tools for evaluating and acting on incidents, and communication/education of identified action plans to address risk as it applies across the organization.

5.0 Discussion and Roadmap Formation (Stage 3)

At the outset of this thesis, the overarching objective was to better understand the barriers that prevent health executives (and the broader health system) from making informed and timely decisions related to identified risks and provide guidance on how organizational risk management can be implemented in health care. With the evidence and key findings that the first two stages of the thesis generated, the opportunity now exists to translate and practically apply that knowledge to the Canadian health care context. In determining the best way to shape this work so that it is of benefit and use to the health system, a roadmap (or model) was developed by the thesis author. Considered in the roadmap are essential context items such as change management (and the need for change), the relationship of risk management to quality and safety, a stepwise description/guide of the key components of organizational risk management, as well as the intentional consideration for how to functionally resource and sustain an organizational risk management program. In designing, laying out, and overall determining what aspects should be included in the model, the thesis author took the perspective (based on accumulated thesis evidence and personal firsthand experience) of what could best inform the typical health care executive and allow them to use the roadmap for developing a comprehensive risk management program. While the roadmap itself is a conceptualization brought together by the thesis author, this could only be accomplished based on the combined learnings of this thesis (see Figure 9).

Figure 9: Stepwise Evidence Generation and Application

Building up to the model, risk management is briefly considered as it has traditionally been approached in health care, which highlights the need for change amongst other related organizational processes.

The Traditional Role of Risk Management in Health Care

Health care has long seen an essential role, if not a fundamental requirement, for managing risk within the delivery of care. In looking at how risk management traditionally (and still widely) takes place (Kicklighter & Miller, 2011), it is important to understand the uniqueness (in general) of risk management within the health system versus other industries. Health care risk management includes some common risk elements that are similar to other industries (e.g. the service and manufacturing sectors), such as general work place safety, and physical hazards to property or infrastructure. However, it is the potential severity of a catastrophic injury to a patient that distinguishes health care from other industries (Carroll, 2011). As described by Carroll (2011), there are not many other industries that function around the clock every day, and in so many diverse and unique ways where poor outcomes result in such dire consequences (even compared to the airline industry, which does share some of these attributes, but even then not in so many individual ways). This distinction sets the health industry apart (intentionally or not) and has caused traditional health care risk approaches to address clinical risk at the point of care as their primary focus. Stepping back and contrasting the health industry to other industries, what can be observed is that because of this unique mandate, health care has over time branched away from other industries in terms of its risk management focus (i.e. health care has largely remained clinical risk focused, whereas other industries have looked to more expansively define their risks

(Carroll, 2011)). The byproduct of this is that broader industry has been more apt to embrace and apply wider ranging risk management theory, such as ERM (Sodomka et al., 2010). This is best illustrated in the financial services industry in Canada, which has been a significant driving force in current risk management theory development (stemming largely from recent wide spread financial calamity in other jurisdictions that has increased the requirement (both practically and legally) for more comprehensive assessments of their own risks) (Sodomka et al., 2010). The benefits that broader industries have been able to show (such as enhanced transparency, increased accountability, greater governance understanding of frequency and severity of risks across the business (Celona et al., 2011); Brazeau, 2008; Baulding, 2008) have left the traditional clinical focused approach to health care risk management looking dated and too narrow in scope.

Risk management in health care has traditionally focused on specific categories of risk (silos) and how a particular risk might affect one care aspect or treatment. While identifying risks in clinical care is unquestionably important (and an essential part of any health care organization's core mandate), it is common for the process to stop once analysis of a particular clinical risk is concluded (Carroll, 2011). The reasons for this are twofold: first, in resourcing risk management, the traditional approach is to create a singular resource knowledgeable in risk theory (the risk manager). Risk managers tend to be clinically generalists by nature, and are largely limited by their time and ability to work with specific staff (on risk related issues) within the increasingly complex health care silos (Carroll, 2011). Second, and highly related, is that accountability (whether intended or not) for traditional risk management is functionally off loaded or largely assigned to the risk manager as opposed to being a broad organizational concept jointly owned by all levels of the organization. This by definition fosters an approach that only looks inwards to

a process versus outwards across related processes. The cumulative effect of this traditional approach fosters an incomplete picture of risk to the organization (Carroll, 2011). This can be illustrated by returning to the example from Vegreville, Alberta that was introduced at the onset of this thesis. In that situation, identifying the focused risk of inadequate sterilization does provide some information on the clinical consequences, however this risk might have (and ended up showing in this instance) other important effects (financial, reputational, political) that should equally be part of the risk portrait, but would not be known unless the risk was considered beyond the local clinical delivery context. These outcomes are associated with real impacts that an expanded risk approach should take into account. In the traditional siloed manner that the health sector in Canada largely operates, the effect that these risks have on other areas of the organization cannot be readily or rigorously explored, nor can the effects that multiple risks collectively have on each other (such as risks to patient safety, patient satisfaction and professional / corporate liability). What the literature shows (Carroll, 2011; Cenicerros, 2008) is that traditional risk management approaches are good at identifying risks within a particular and specific health service, but that this isolated approach fails to identify or extend to the equally important relationships among risks and between silos. In such a context, it is then possible that the greatest risks facing the organization are risks that do not fall naturally into an area identified or treated by a traditional risk management effort. Without the ability to move beyond the constricted clinical focus, the true risk to the organization will remain elusive and unfortunately often only fully be realized after a major risk event taking place.

In contrast to traditional risk management, organizational risk management intentionally addresses the above shortcomings by broadening the approach to risk, examining multiple

categories of risk, and by estimating how the repercussions arising from a given risk might affect the organization as a whole (Celona et al., 2011). The goal of organizational risk management is to intentionally shift accountability off of a single individual (or risk manager) and instead assign accountability widely so as to highlight the greatest risks to the entire enterprise, whether those risks are regularly encountered or have never been even considered (Behamdouni, 2010). Once the greatest risks have been identified, organizations are better able to determine (and action) an appropriate, integrated response (focusing on prevention, mitigation and timely management) (Carroll, 2011). When contrast with the narrow traditional approach to managing risk in health care, the enhancements gained from a broader organizational approach (through ERM) is the key reason why the health system as a whole needs to change its approach or model of risk management. The key to improving capacity in this regard, which this thesis will next address, is to formalize a process that removes the barriers to a health organization transitioning from a traditional risk approach to an organizational ERM approach.

Health Care Risk Management – Evidence for Change

As suggested cumulatively by the above presented findings (Stages 1 and 2), what is observed in both the literature and experiences within the Study Organization is a clear willingness by health leaders to do a better job at managing risks (AbouZahr, 2007). This willingness is confounded by the complexity of the health care system, its multiple players and interests, and the absence of a clear mechanism or common approach to risk management. Commonly reported by health leaders from the Study Organization were situations where risks were known, but no clear avenue to have the risks addressed was apparent. Similarly, risks would be reported, but no

apparent action taken by senior leaders would be observed, leading to questions and uncertainty of whether or not the risks were addressed or even taken seriously.

This highlights the need for a defined organizational risk management approach. A commonly reported observation is that the function of risk management is housed in different silos depending on operational structure. For example, within the Study Organization, risk management was traditionally viewed in the clinical care context. Other risk components were distributed across various portfolios – leading to a divergence of processes and masking the overall understanding of risks to the organization. Reports done by Minsky (2007) on the state of risk management and in particular ERM suggest that broadly coordinating an organizational risk program reduces uncertainty and, over time, improves the prospects of success in terms of addressing financial and insurable hazards, as well as guiding strategy, operations and technology, reputation, and regulatory compliance within the organization. Jeffs et al. (2006) take this further and suggest that what is required is a system that includes a combination of internal stakeholders throughout the strategic planning process, balanced with external review and consultation. Kaplan and Norton (2005; 2000) describe such a system in terms of a risk management framework that is an embedded component of corporate execution of strategy, with a successful framework requiring: clear communication of intended organizational values and strategy; processes to ensure enterprise level plans are translated into the plans of the various units and departments; alignment of employee competencies, skill sets, goals and incentives; and a clear understanding of the overall objectives of the framework – from the senior board level through to the front line.

From these findings, what is now concluded is that an organizational risk management model that links current and new risk practices from across the organization into a defined and supported risk framework is required. Further, the ERM framework needs to be customized to the organization itself, dependent directly on the organizational structure, resources, local context and overarching goals and objectives. The risk framework needs to interface strategically with the planning and decision-making function in order to action and/or strategically address risks in a timely fashion. The entire organizational risk management strategy requires dedicated support and clear communications between stakeholders (internal / external) in order to link together information, methodology, and skills, and overcome critical barriers.

Relationship of Quality, Safety and Enterprise Risk Management

In the majority of health organizations, there are multiple operational areas whose function could be defined as being risk related. Examples of this include the many quality improvement and patient safety programs that seek to advance organizational effectiveness and the patient experience. Taken from the perspective that both quality and safety are operational processes that have (in certain aspects) considerable exposure to organizational risks, it is this risk exposure that ERM is trying to systematically capture from each part of the organization. The distinction between these concepts is that ERM considers the whole spectrum of issues that could and can go wrong to the organization, which not only includes safety involving staff, patients and the public, but also the management of the business risks associated with running the health organization (including financial, ethical, information technology, and strategy risks) (Haynes & Thomas, 2005). Through ERM, an intentional focus is placed on how these interrelated activities

impact the decisions and actions of the organization so that overall business improvement can be made in terms of cohesively addressing risk (Balding, 2008). However, it is not suggested that ERM take over or otherwise replace these other programs, but rather build off of and capture the risk information from these key quality and safety activities. In other words, the goal behind taking a decentralized organizational approach to managing risks is to tap into (i.e. leverage) these and other key operations in order to fully capture and cohesively address risk across the organization.

Enterprise Risk Management Roadmap

Throughout this thesis, emphasis has been placed on the key notion that strategic development and alignment of organizational risk management is most successful when driven from within the organization. Taking this concept and the accumulated findings together, the following model is presented as a roadmap for ERM to be pursued by senior health leaders (see Figure 10).

The Model for Organizational Risk Management (termed ‘the Model’) is based on the identification of 5 key components that make up a comprehensive organizational risk management strategy. The five components consist of:

1. An Organizational Risk Network
2. The ERM Framework
3. The Strategic Planning / Decision Process
4. Implementation
5. Evaluation

Functional support of *The Model for Organizational Risk Management* is accomplished by way of emphasis on a decentralized organizational approach maintained by an ERM support department. The components of the Model are now discussed.

Components and Key Elements of the Model

Model Component 1: Organizational Risk Network

Of fundamental importance to the whole system of organizational risk management is how to build buy-in and incorporate key risk management tools so as to be able to successfully identify and manage enterprise risks. What is needed is a comprehensive mechanism to link the organization and stakeholders into the risk management framework. The ‘Organizational Risk Network’ (or Risk Network) has been conceived of by the thesis author and is designed to link operational leaders (from across the organization) and other stakeholders into a shared organizational risk management program in order to directly overcome accountability and information flow barriers that have been identified in health organizations. By establishing a clear communications conduit (the Risk Network) that is rooted in a organizational risk program (i.e. the ERM Framework - discussed further), staff and stakeholders have a clear forum to exchange information based on a shared approach to identifying and addressing organizational risks across the many aspects and levels of the organization.

The Risk Network can be thought of as a virtual working group having many of the same characteristics as a committee structure (i.e. operating principles, structured tools and resources,

internal / external membership, defined reporting / communication obligations), but also having characteristics of a network (in the technological sense), as it is constructed to go beyond a traditional committee in terms of its reach (or connection) with stakeholders to link information, expertise and resources. The Risk Network works by providing continuous support to the risk management program based on champion building and the application of timely tools and resources. Such an approach is required to identify risks from both internal and external participants as well as administrative and operational personnel. When brought together in this fashion, information can be generated (pulled) as well as disseminated (pushed) throughout the organization, as well as externally. It is from the Risk Network that ERM Framework is operationalized. Linkage into the Risk Network is accomplished by a variety of means, depending on the resource capacity of the organization, and includes primarily electronic methods (such as email, web resources or dedicated risk alert applications) as well as interpersonal approaches as required (such as periodic meetings, focus groups, or resource centres). Interactive communication is the fundamental premise behind the Risk Network, as the flow of information needs to exist within a clearly developed mechanism in order to support and link the organizational risk program with the business. By premising the Risk Network as a virtual working group, the size and integration of the Network has the flexibility to mature and expand in lockstep with the needs of the membership based on a progressively accumulating skill set. This allows the Network to continually expand in size, without necessarily being limited by the constraints of a traditional committee, which often can become limited by the time and resources required for in person meetings. For example, once champion building and technological capabilities have been fine tuned (i.e. the Risk Network established), the emerging virtual processes become the accepted/familiar go forward approach, allowing subsequent emphasis to

be placed on: ensuring elements of the risk program are understood and applied consistently, refining electronic tools to match the evolving communication and information needs of the Network, and rationalizing the most resource intensive activities (i.e. in person meetings) on specific risk issues where warranted.

Put into practice, the Risk Network could be approached as follows. First, health leaders would structure and endorse a defined terms of reference for the Risk Network (establishing size, scope, and function). Second, representatives from each operational area of the organization and key stakeholders could be selected as Risk Network members. Rather than focusing on a particular level or seniority, membership would ideally be based on selection of individuals with roles that afford a broad exposure to the scope of operations within a particular area of the organization. Third, the Risk Network members would be educated on the organizational risk program and in particular the ERM Framework (expertise / champion building). Fourth, the Risk Network members would identify / evaluate tools and resources required to identify risks within their sphere of operations. Fifth, the Risk Network would be a conduit through which risks as well as associated risk information could be brought forward and addressed (in accordance with the ERM Framework). Sixth, the Risk Network becomes a key mechanism for organizational risks to be linked into the senior decision-making process in the form of structured reporting, issue elevation, and priority setting. Lastly, the Risk Network becomes the communications dissemination channel of outcomes, issues awareness, mitigation activities or trending information. Overall, the Organizational Risk Network is a decentralized approach to capturing, assessing and prioritizing risk activities of the organization.

Central to the Organizational Risk Network concept is the need to establish operational champions who would be the local resource (expert) to and for their area of accountability and would maintain current knowledge of ERM strategies as the liaison to and from the Risk Network. In this way, the operational champions would be equipped with the skills and tools needed to employ the ERM program in terms of capturing, assessing, prioritizing and reporting risks. Operational champions would be identified throughout the organization in order to encompass all areas. The same approach could also be applied to external stakeholders.

Summary of Key Organizational Risk Network Components:

- Core Shared Principles
- Structured Tools and Resources
- Interactive Communication
- User Driven Push / Pull Conceptual Design
- Internal / External Stakeholder Inclusion
- Shared Understanding of ERM

Linkages

Figure 10: The Model for Organizational Risk Management

Key Elements:

<p>1 Organizational Risk Network Interface</p> <ul style="list-style-type: none"> • Commitment and vision from the top of the organization to establish cultural norms. Everyone is a risk manager. • Use multi-disciplinary teams to share risk attitudes and horizontal issues. • Set up dedicated department to act as the process support resource for the organization. • Make risk management a part of the normal management process. • Emphasize risk communication • Recognize the multiple levels of risk management. • Ensure stakeholder acceptance. 	<p>2 ERM Framework</p> <ul style="list-style-type: none"> • Ethics based core principles • Shared understanding, terminology and roles / accountability • Complexity is not necessarily better • Emphasize the importance of correctly defining the actual problem • Risks are considered in a comprehensive context, considering other objectives • Explicit treatment of uncertainty and prioritized risks • The process is flexible and iterative • Focus on clear evaluation and reporting of risk information • Use all available evidence to understand risk. • Analyze trending information. 	<p>3 Strategic Planning / Decision Process</p> <ul style="list-style-type: none"> • The decision process is documented, open and understood. • Actions and resources directed where they will be most effective • Recognize the multiple levels of risk management decision making • The process balances the costs of managing the risks, the benefits to be gained, and the level of risk management that is reasonable to apply. • Risk assessments should not be the sole tool used to determine risk decisions. • Flexible approach based on short, medium or long time horizon. 	<p>4 Implementation</p> <ul style="list-style-type: none"> • Detailed implementation plan / operational tactics targeted to the appropriate level of the organization. • Clear procurement & commissioning strategy (education & training) • Open stakeholder dialogue / communication. • Monitor implementation amongst organizational levels • Adequate assessment of time horizon and goal setting. • Resources clearly defined deployed. • Objectives easily understood. • Consideration for measurement of strategies. • Ensure approach address the risk. 	<p>5 Evaluation</p> <ul style="list-style-type: none"> • Emphasize performance measuring. • Evaluate the organization's performance against stated objectives / identified risk. • Continuous environmental analysis can identify possible future changes in the legislative framework, the exposure, the hazard, risk acceptability, stakeholders, or technology. • Analyze and openly discuss successes and failures • Monitor for intended and unintended outcomes.
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Model Component 2: ERM Framework

The ERM Framework (see the centre of Figure 10) is an essential component of the overall key requirements of successful organizational risk management. The ERM Framework outlines the overarching premise or the shared organizational ‘how to’ in the treatment of risk. As discussed earlier in this document, many ERM frameworks and modalities exist, which presents an opportunity for health organizations to determine the most practical framework to adopt / implement. As part of the research methodology undertaken in this thesis, an additional key outcome has been the development of an *ERM Framework Evaluation Tool*. This tool is intended to equip health care leaders with a research supported mechanism to assess and compare different ERM frameworks in order to select the most appropriate framework (or combination thereof) for the local context.

The ERM Framework Evaluation Tool is based on three key benchmark categories of assessment (Jardine et al., 2003).

1. The fundamental elements of successful risk management
2. The key elements of strategic risk decision making, and
3. The underlying local organizational vision, mission, and values.

Each of the three categories is broken down into a series of expected elements or key requirements in an ERM framework. This benchmark then serves as a basis for potential ERM frameworks to be assessed by the individual health organization. Comparison (i.e. strength of a particular ERM Framework) is based on scoring by local health leaders of each element, with

emphasis placed on predetermined weightings of importance to the organization (see Figure 11 and Appendix 7). After scoring potential ERM frameworks with the tool, the resulting scores can be compared. Based on the unique needs and characteristics of the organization, an ERM framework can be selected with the full knowledge of its strengths and weaknesses (which then can be customized to the organization).

Figure 11: Sample Section from the ERM Framework Evaluation Tool

Key Overarching Elements to be Included in a Comprehensive Risk Management Framework (Ceniceros, 2008; Jardine et al., 2003; Leadbetter, Kovacs, & Harries, 2008)	Method Addressed in Potential Framework?	Weighting / Score (Set Weightings based on Organization Priority)
1. Problem formulation stage.	Yes ☐ or No ☐	Overall [?]/15
• Framework combines context with clear techniques to define problem.	Yes ☐ or No ☐	[?]/4
• The dynamic nature of risk is acknowledged.	Yes ☐ or No ☐	[?]/3
• Correct definition of the problem is fostered.	Yes ☐ or No ☐	[?]/2
• Problems are identified, formulated, and characterized within the local context.	Yes ☐ or No ☐	[?]/2
• Risk management goals, authority, responsibility and resources are understood.	Yes ☐ or No ☐	[?]/2
• Recognizes the need for collaboration and communication with stakeholders in defining problem.	Yes ☐ or No ☐	[?]/2

It is within the ERM Framework where the mechanics of risk management come into play. Most, if not all, ERM frameworks share the following characteristics, which then become the basis for how an organization defines and treats risk. It is the approach to each of these characteristics that in many cases differentiates ERM frameworks and allows customization depending on organizational need.

Common features of ERM Frameworks include:

Preliminary analysis (identification): <ul style="list-style-type: none">• Hazard identification• Risk context (the dimensions of risk)	Risk treatment options: <ul style="list-style-type: none">• Generate options• Risk analysis of options• Optimization of strategies and options
Risk analysis: <ul style="list-style-type: none">• Risk estimation• Benefit-cost analysis• Socioeconomic analysis	Risk mitigation: <ul style="list-style-type: none">• Assessment of resources and priorities• Selection of course of action

The above common features of ERM frameworks lead up to the next Model component.

Model Component 3. Strategic Planning / Decision Process

One of the main barriers to effective organizational risk management is the interface between the risk program and the *Strategic Planning / Decision Process* of the organization. Challenges emerge as traditionally these processes have been seen as distinct, which presented natural barriers to identified risks being advanced (or actioned) through the strategic process (Eisenhardt, 2008). With the development of ERM, which intentionally combines risk management with strategy and planning, emphasis now is placed on appropriately channeling (or reporting) sequential risk information into the strategy / decision process. In other words, ERM by definition is the bridge between risk management and decision making, as identified risks are treated through the ERM Framework to produce information that is used to make strategic decisions. In this Model (see Figure 10), the interrelationship between the ERM framework and the Strategic Planning / Decision Process is depicted as the Risk / Strategy Interface.

Recalling the ERM Framework Evaluation Tool described earlier, key elements of decision making are assessed in order to ensure the selected ERM framework will align with the strategic planning / decision process of the local health organization. This is done by evaluating the ERM Framework against current planning / decision processes as well as organizational values and mission. Rigorous assessment up front of potential ERM frameworks, ensures that the information generated from the risk process is useful in the strategic decision-making process.

Risk information stemming from the ERM Framework will consist of a range of issues depending on their complexity and their origin from within the organization. Each will have an inherent time horizon, or urgency to them, requiring a flexible strategic decision process. This variable nature is depicted in the Model at the center of the Risk Strategy Interface. Building on the fact that health organizations (as will all businesses) have multiple levels of decision making, a similarly flexible interface of risk information with the organization planning / decision-making process is required. As such, a key strength of the ERM Framework needs to be its ability to categorize and distill issues in order to foster strategic decisions at the most appropriate organizational level(s) by knowledgeable personnel. Depending on the nature of the risk, multiple areas of the organization may be involved in the strategic decision process. This is fostered by the linkages created in the Risk Network, which serves as a means to bring risk and stakeholders together.

Overall, the complexity of the assessed risk needs to have an equally robust corresponding interface with the Strategic Planning / Decision Process. Two avenues of strategic decision making are represented in the Model, a *Formal Process*, and an *Informal Process*, which are

distinguished (for illustrative purposes) based on the time horizon of the issue and the nature of the risk. Briefly described:

1. Strategic risks— tend to have a longer-term time horizon and warrant a formal strategic decision by senior leadership, who make decisions on programs, departmental structure, etc. For example, the decision to commit resources to a new health service initiative or program.
2. Tactical risks— tend to have a medium time horizon and can warrant either a formal or an informal strategic decision at the senior or department level based on policy analysis (i.e. the decision to make changes in methods for implementing a new service initiative or program).
3. Operational risks— tend to have a short-term time horizon and warrant an informal strategic decision at the operational level on day to day, control of risks in operations through supervision, correction, retraining of staff, and other quality control methods (i.e. the decision to make corrections to an identified challenge within a new service initiative or program).

The Risk / Strategy Interface can be further illustrated by the following simplified example that pulls together the components of the Model described so far. For example, during a routine risk assessment there is a noticeable difference identified between the success rate of a procedure at a local health facility compared to external benchmarks. This risk is then reported to the Risk Network and analyzed utilizing the processes of the ERM Framework, which identify the problem as consisting of staffing misalignment, technology cycle breakdown and responsibility/accountability uncertainty. Related members of the Risk Network (i.e. human

resources, information technology, clinical and medical services, and a member of the senior leadership team) form a focused sub-group to assess potential risk treatment options based on a mixture of shorter (Operational / Informal) and longer term (Tactical / Formal) solutions. A course of action is developed (considering organizational core values, resources and context) and communicated widely to the Risk Network. The senior leadership, where required, provide endorsement (see further examples in Figure 12).

The above example is intended to emphasize the need for flexibility between the ERM Framework and the Strategic Planning / Decision process of the local health organization depending on the nature of the risk. However, it cannot be understated that regardless of the process employed, information identified through the ERM Framework (i.e. each and every issue) must be dealt with and not ignored. Tracking and shepherding risks is a shared process throughout the Model and is supported by a combination of the Organizational Risk Network, reporting features of the ERM Framework, and the ERM Support Department (discussed below).

Figure 12: Examples of Use of the Model Components

Risk Program Element

Model Component

- Assessment / Screening Tools
- Issue Identification
- Communication
- Internal / External Considerations
- Initial Risk Perception
- Background Information Gathering
- Identification of Related Stakeholders
- Initial Impact Analysis
- Issue Prioritization

- Risk Assessment Methodology
- Clear Problem Definition
- Impact Analysis (Who?)
- Risk Classification / Prioritization
- Resource Scan
- Time Horizon
- Initial Risk Response Options
- Formal / Informal Process

- Defined Decision Level
- Decision / Planning Methodology (Core Values)
- Refined Preferred Options
- Resource Implications / Opportunity Costs
- Stakeholder Impact Assessment
- Time / Impacts on Strategy
- Assigned Accountability

- Defined Accountability
- Clear Goals / Objectives
- Documented Implementation Strategy (Plan)
- Approved Resources
- Iterative Stakeholder Interaction
- Performance Measurement

- Determine if Risk Eliminated (Mitigation)
- Assess Intended and Unintended Outcomes
- Consider New Opportunities
- Environmental Context Scan
- Stakeholder Perceptions
- Follow-up Reporting

Example: Strategic Risk

A neighboring Region experiences an unexpected patient death at a contracted health provider organization which we also contract with for similar service.

- Initial Stakeholders Identified: Senior Management, Contracted Provider, Neighboring Region, Medical and Allied Professional Staff, and Communication Staff
- Background / Initial Analysis: Regulatory / Liability Risk
- Possible Contributing Factors: Staffing Vacancy, Accountability Uncertainty, Provider Suitability / Appropriateness, Patient Acuity Level

- Assessment: High Priority, High Potential for Local Occurrence. Reputation, Regulation & Political Components. Risk Prevention
- Defined Problem: Provider Inexperience, Compliance to Standards Failure, Inadequate Monitoring / Role Confusion, Inadequate Contract Specification
- Formal Process Required

- Stakeholder Perceptions Considered
- Senior Management Decision
- Selected Option: End Existing Contract, Redefine Roles, Bring Partial Services Back In House, Seek Alternate Provider, Commit Resources to Shared Education / Training/ Performance Measurement
- Implementation Plan Pursued and Assigned to Executive Member

- Formal Implementation Plan Generated
 - Set Goals / Objectives
 - Redefine Care Pathway / Define Partnerships
 - Education Expectations
 - Performance Evaluation
- Supported Plan Rollout

- Defined Quarterly Interval of Reporting
- Comparison of Performance Against Defined Goals
- Patient / Staff Surveys
- Continued External Monitoring for Related Issues
- Review of Unexpected Outcomes

Example: Tactical Risk

Current electronic health record software provider bought out by unknown multinational corporation.

- Initial Stakeholders Identified: Senior Management, External Software Provider, Information Systems Department, Privacy Commissioner, Privacy & Security Office, Finance Department, Health Records Department
- Background / Initial Analysis: Regulatory / Liability Risk , Service Interruption
- Possible Complicating Factors: Dispute Over Data Ownership, Withdrawal of Service Support

- Assessment: High Priority, Medium Immediate Impact. Possible Health Service Delivery, Reputation & Regulation Components
- Defined Problem: Questionable Ownership of Data. Possible. Withdrawal of Tech Support to Software and Privacy Implications
- Formal Process Required

- Senior Management/ Operational Level Decision
- Selected Option: Seek Clear Commitment / Understanding from Software Company. If Required, Seek Intervention from Privacy Commissioner. Explore Alternate Software Providers
- Implementation Plan Pursued by Executive / Departments

- Formal Implementation Plan Generated
 - Set Goals / Objectives
 - Foster Relationships / Prepare Back ups
 - Performance Evaluation Criteria
- Supported Plan Rollout

- Comparison of Outcome Against Initial Challenge
- External Monitoring for Related Issues
- Sharing of Implications for Future Software Agreements.
- Performance Measure Reporting
- Review of Unexpected Outcomes

Example: Operational Risk

An increase in the number of fetal hypoxic events as compared to external benchmark.

- Initial Stakeholders Identified: Maternity / ICU Departments, Medical and Allied Professional Staff, Finance Department, Information Systems Department, ER Staff
- Background / Initial Analysis: Standards of Care, Medical Malpractice, Patient Injury
- Possible Contributing Factors: Staff Training, Policy Uncertainty, Proper Use of Technology / Equipment, Communication Gap

- Assessment: High Priority, High Immediate Impact. Essential Health Care Component. High Potential for Severe Adverse Patient Outcome
- Defined Problem: Failure to recognize fetal distress and/or interpret fetal monitoring. Inability to perform emergency c-section.
- Informal Process Required

- Operational Level Decision
- Stakeholder Perceptions Considered
- Selected Option: Establish Bi-annual Fetal Monitor Training, Identify / Purchase New Technology, Float Obstetricians, Host 'Mother to Be' Event, Update Policy Controls / Care Standards
- Implementation Plan Pursued and Assigned to Maternity Department

- Formal Implementation Plan Generated
 - Set Goals / Objectives
 - Foster Relationships Between Departments and Professional Staff
 - Performance Evaluation Criteria
- Supported Plan Rollout

- Defined Annual Interval of Reporting
- Comparison of Performance Against Defined Goals
- Staff Surveys
- External Monitoring for Technological Enhancements
- Performance Measure Reporting
- Review of Unexpected Outcomes

Model Component 4. Implementation

In this stage of the Model, once a strategic decision has been made, the decision needs to be pursued or implemented (see Figure 10). This most often involves the mobilization of capital, personnel, detailed plans (tactics) with clear objectives, and continual communication. It also needs to involve clear techniques for managing the change process in direct proportion to the magnitude or size of the implemented decision. A key feature of the Implementation component of the Model is its direct relationship with the strategic planning process, which is the driver for implementation. In other words, issues or risks do not exist in isolation, and strategic decisions to pursue a course of action need to be made within the context of the overall direction of the organization (at all levels).

In practical terms, the Implementation stage of the Model needs to be characterized by a well thought-out implementation plan, as it is the implementation plan that is the basis for carrying out the selected decision. The plan should document the specific tasks and timeframes for completion; the roles, responsibilities, and accountabilities of participants; tactics for communication and engagement of interested and affected parties; and the criteria to be used for monitoring and evaluation. The plan should include ‘show stopping’ criteria that will stop the implementation and return the issue to the planning / decision process to prevent deviation from expectations (e.g. unintended risks emerge, implementation has adverse consequences on other organizational programs, or that anticipated budget or resource requirements are exceeded) (Adams, 2005). Consideration of staff training, and the availability of regular performance information that can assist in identifying improvements resulting from the action taken, also need

to be made. Of key importance, the implementation plan also must consider the common barriers to change within an organization and intentionally address them. Some effective change strategies that should be consciously considered include (Brockner & Wiesenfeld, 1996):

- Identifying potential sources of resistance to the intended change
- Creating a sense of urgency for the change
- Providing a vision of the future state
- Clearly outlining the process to move from status quo to future state
- Developing a strong leader role – role modeling, rewarding / emphasizing small wins
- Lining up political sponsorship (stakeholders) and leverage support
- Communicating, involving people, and being honest
- Reducing the personal cost of change:
 - Address the basis of individual resistance
 - Ensure a fair process
 - Illustrate the cost-effectiveness of change
- Removing barriers:
 - Lack of knowledge
 - Lack of understanding of positive effects
 - Lack of motivation
 - Threats to power

Throughout the implementation process, the Organizational Risk Network can be of considerable use as an information conduit for the implementation plan, in the identification of internal and external stakeholders and expertise, as well as a resource on approaches and methodology for making strategic improvement.

Model Component 5. Evaluation

The last component of the Model involves evaluation and monitoring of implemented decisions in terms of intended and unintended consequences (see Figure 10). Evaluation in this sense includes assessing the organization's performance in meeting its objectives, including the implementation of strategic programs and activities and their risks and benefits. Evaluation and review activities provide important information to determine whether the risk decisions are efficient, cost-effective, and reflect the strategic and operational context of the organization and whether the overall decision-making process is adequate. Monitoring is an essential and integral step in the process for managing risks in order to identify emerging risks and facilitate continuous improvement in the decision process.

Evaluation, although represented as a distinct component in the Model, has been included in each portion of the Model. For example, the Organizational Risk Network includes tools to pull together trending information from both internal and external sources (such as the regulatory environment, stakeholder views, and new technology or care advances). Similarly, the Risk / Strategy Interface needs to evaluate costs and benefits and discussions with stakeholders to determine the effectiveness of risk management actions. Ongoing evaluation of the resulting implementation plan to ensure that risks are mitigated is also essential. Since the organizational risk management process is a circular process, both evaluation and monitoring can occur at any point in the loop.

Effective risk-management programs are those that deliver cost-effective risk outcomes and reflect the strategic and operational context of the organization. The context includes the financial, operational, competitive, political (public perceptions/image), social, cultural and legal aspects of the organization's functions. It is necessary to understand the objectives and mandate of the organization and its capabilities when making decisions about risk. This helps to define the criteria by which risks are evaluated and from which better or more effective health care decisions and outcomes can evolve.

Barriers to Risk Management – Revisited

With the development of *The Model for Organizational Risk Management*, it is important to revisit key barriers to effective risk management that were raised by the literature and Study Organization. In particular, the apparent widespread accountability uncertainty for managing risks and information gaps in planning and decision making.

The Model directly addresses these issues by first defining an explicit approach to risk management through the ERM Framework, second by establishing a Risk Network that links information with existing accountability structures, third by emphasizing the importance of utilizing risk information to reach strategic decisions, and fourth by explicitly addressing how risk mitigation will be actioned. Taken together, the ERM Framework sets out the rules for how risk is understood, how it is treated, and by whom; the Risk Network fosters unified information exchange between staff and stakeholders by providing a defined destination for local observations, questions, or perceptions of risk – ensuring that information is communicated

broadly and leveraging organizational expertise; the Strategic Planning / Decision Process brings to the forefront the necessity of looking at risk organizationally by promoting strategic decisions that address risk at the appropriate organizational accountability level based on the nature of the risk; and the Implementation Process ensures that decisions are supported by clear tactics that will result in the desired outcomes being realized. Taking the Model as a whole, questions around accountability and information gaps are addressed and an approach that fosters broad engagement and genuine participation across the organization is achieved. While it is difficult to anticipate every potential barrier, application of this Model intentionally removes much of the prevalent uncertainty around risk management, and positions a health organization to be able to focus on managing organizational challenges.

Functional Support for the Organizational Risk Management Model

In order to administer the concepts presented in this Model, a formal support structure or ERM Resource (endorsed by senior leadership to develop and maintain the risk management program) is needed (see Figure 13 example). The risk management program is then delivered (or operationalized) by each of the areas of the organization. In this way, the organization is blanketed by the risk management program, supported by the ERM Resource, with accountability directly retained by the operational levels to identify and manage risks for their area. This decentralized approach leverages the expertise and functional knowledge that exists within the diverse programs that make up the organization. The ERM Resource is essential in establishing and maintaining the mechanisms used to tap into this knowledge, so as to apply and benefit organizationally from the ERM framework. Recalling the fundamental premise of ERM

to be enterprise wide, caution is needed to ensure that the ERM Resource is structured as a support department and not as the functional risk manager. In other words, the organizational risk program cannot be done by a single area, but instead, needs to be a component of operations throughout the organization. This is fostered by the explicit recognition that ERM be delivered via a decentralized approach.

When viewed as a support department, key functions of the ERM Resource include:

- Designing the structure, administration, and education of the risk management program

- Developing and maintaining supporting policies and risk management program mechanisms (technological / interpersonal)
- Synthesizing and presenting risk information / organizational risk profiles
- Working with and supporting the Risk Network and participants
- Fostering linkages both internally and externally as part of the Risk Network
- Developing and implementing ERM tools and resources (i.e. Risk Audit Teams)
- Facilitating communication of identified risks and mitigation strategies throughout the organization (push / pull)
- Linking the risk management program closely with existing core risk processes
- Stewarding issues throughout the Risk / Strategy Interface to action
- Fostering robust and timely implementation plans and follow up evaluations

Depending on the breadth of the health organization, the size of the ERM Resource is scalable in terms of the number of dedicated resources required to implement an effective organizational risk management program. When determining the size of the ERM Resource, emphasis needs to be placed on ensuring knowledgeable staff (in terms of ERM and health care in general), are in place who can work closely with existing personnel and programs to foster a common understanding and approach to risk management. Relationship building, technological skills, and the ability to communicate are a crucial component of the ERM Resource. The strength of the presented Model and in particular the reliance on a decentralized approach, is not in developing an extensive ERM Resource, but rather leveraging the existing talents and resources within a unified organizational risk management approach.

Practical Development of a Sustainable Health Care Organizational Risk Management Program

The Model for Organizational Risk Management has been designed to be approached in a stepwise fashion within the context of a local health organization. As described, the Model lays out five core components that need to be explored and customized to the local setting based on the unique characteristics of the organization. In this manner, adoption of the Model represents a commitment to assess current processes, and in a systematic way, incorporate ERM into the risk management program. While the exact approach employed may differ between organizations, the following is an example of a procedure that could be undertaken to implement this Model.

Sample Stepwise Implementation

Adoption of this Model suggests that a local process be undertaken to:

1. Understand the current existing organizational processes (including risk management functions and decision-making processes). This may involve process mapping in order to fully understand how it works now. Compare against Key Elements described in the lower portion of Figure 10.
2. Confirm the need for changes in practice (what has worked well, what has not worked well, what could be improved). Do barriers that have been identified in the literature apply to this organization? What are the local perceptions of current practice?
3. Work with the senior health care leaders to assess (using the ERM Evaluation Tool) the most viable ERM framework for the organization (based on interrelationship of current practices, organizational capacity and desired outcomes). Set initial key priorities, measure and confirm commitment of resources.

4. Develop implementation plan.
 - a. Establish the ERM Resource (or equivalent) tasked with implementing the organizational risk management program. Focus on a decentralized approach supported by knowledgeable expertise.
 - b. Establish an Organizational Risk Network. Based on senior health leader input and endorsement, development of: a network with representation from each functional area and a defined terms of reference; a common understanding of ERM (including language); interactive communication tools; educational resources; as well as clear reporting mechanisms.
 - c. Identify and develop a core group of champions from which to further develop local expertise. What are the natural areas that will have an interest in ERM? Who are the individuals who have been involved in 'risk management' to date? What skills and resources already exist? Clearly articulate the benefits of looking at a unified risk management approach.
 - d. Understand and define the ERM process as it relates to strategic decision making and planned outcomes. Clarify roles and accountabilities. Develop risk prioritization tools, tracking mechanisms and reporting instruments.
5. Implement the Organizational Risk Management Model. Promote early wins, adapt based on stakeholder feedback.
6. Link in external stakeholders and refine processes of reporting and communication.
7. Evaluate progress. Ensure the risk process is working, beneficial, and addressing core organizational needs. Assess / adjust as required to unexpected barriers / resistance.

Following the above steps (or variations thereof) should position the health organization with the means to implement a viable ERM framework as part of the overall organizational risk management program.

Evaluation of the Model for Organizational Risk Management

Once a health organization has deployed *The Model for Organizational Risk Management*, it is essential for health care leaders to measure and continually assess its benefits. There are a variety of ways that such an evaluation can be done (Grembowski, 2001), however, Carroll (2011) suggests that linking financial information with risk information generated from the organizational risk management program is the ideal way to demonstrate the value or return on investment. This is accomplished by establishing performance measures for the program in order to make comparison against program goals. Measurement of the project against performance expectations takes the subjectivity out of the effectiveness question and allows the effectiveness of the program to be monitored over time.

In order to evaluate the program, risk measures that have a financial overtone are optimal for comparison, and the measures selected need to be able to be reported both before and after the deployment of the organizational risk management program. Based on commonly available and reportable measures within Canadian health care organizations, Carroll (2011) suggests that the following measures be used throughout deployment of an organizational risk management program:

1. *Total number of Claims* – The total number of claims represents the high level results of the risk program for the organization. The measurement is created by counting the total number of claims for a given time period (i.e. pre and post model deployment) and can be tracked in a line graph and plotted at set intervals. This provides a baseline of the volume of claims against the organization across several areas. A potential disadvantage is that the numbers are often low in smaller health organizations and can sometimes have large time lags between commencement of a claim and the date of the actual risk event.
2. *Total number of Potential Claims* – Many health organizations track potential claims, which are more frequent events that involve identifiable harm but no legal activity or demand for compensation has been made. These potential claims provide a sense of volume of potentially compensable events that the organization is experiencing, allowing comparisons to occur over time.
3. *Cost to the Organization for Claims* – The total claims cost, along with the claims volume, are good foundational measurements of a deployed risk program. The advantage of this measure is that it provides a direct measurement of financial obligations, which can be used to compare against the cost of deploying the organizational risk management model.
4. *Qualitative Measurements* – Many organizations track broad process measures that indicate that the structure of the risk management program has been implemented. They include the creation of policies and procedures to document the risk management program or the frequency of communication of risk management issues to senior leadership. Although these measures indicate whether a basic risk management infrastructure has been established, they do not indicate (necessarily) the success of the

organization in reducing risk on their own. However, when linked with additional measures as suggested above, health care leaders are able to make a reasonable evaluation of the success of the organizational risk program.

Taken altogether, and depending on the unique circumstances and data capture capabilities of the health organization, it is key to use measures such as these to assess at the outset, and along the way, the value contributed by the organizational risk management program.

Successes, Challenges, and Future Avenues of Study

The Model for Organizational Risk Management is designed as a roadmap that health care leaders can use to pursue ERM in a local health setting. Development of this Model appears to have been well-timed as interest in risk management has generated opportunities to introduce these concepts throughout jurisdictions in Canada (Haney, 2010). Resulting feedback has been very supportive of the Model, and in particular, the concept of a Risk Network. Being able to link a risk strategy throughout the organization in an integrated and cost effective manner has considerable appeal for health leaders, particularly in the current fiscal and political environment. Health leaders have also been very receptive to the background analysis and clarification of what ERM is and how it relates to healthcare, which appears to have been a poorly understood concept.

The opportunity to share this work broadly has also generated common areas where questions about the Model have been raised, these have tended to include: 1) how best to identify potential

ERM frameworks (as there appear to be many, and the ERM Framework Evaluation Tool only works to assess ERM frameworks that have already been identified), 2) how to determine the appropriate size and scope of the risk network, and 3) how to balance formal support (or control) of the organizational risk management strategy and still allow staff and stakeholders opportunity to take beneficial ownership of the process. These potential challenges are key lessons on the level of detail that health leaders may require in order to successfully adopt an organizational risk management program, and are an excellent indication of where future avenues of study should focus. As a key next step, this Model is currently being adopted by a major health organization which will allow direct study of the successes and failures associated with Model component. These results are intended to be the subject of further reports on this subject.

6.0 Conclusions

The findings from this thesis present a comprehensive methodology for approaching organizational risk management within a health care setting. Based on a wide assessment of published literature and comparative analysis within the Study Organization, *The Model for Organizational Risk Management* has been developed as a basis for linking the components of an ERM Framework into the existing processes of a health organization in order to overcome the barriers that commonly disrupt strategic risk management within health care. The approach taken looks beyond simple adoption of an ERM framework, to how best an ERM framework can fit within an existing multifaceted health organization by building off of and/or enhancing existing processes and resources in order to ensure familiarity, acceptance, and ultimately sustainability of the risk management program. By approaching the Model in a stepwise fashion based on local organizational context, health care leaders are provided with a roadmap from which to initiate or advance their own organizational risk management program.

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8.0 Appendices

Appendix 1: Study Organization Survey

Evidence Informed Risk Management: From First Alert to Strategic

1. Introduction

With the Alberta health sector evolving in complexity, structure and scope, strategies to identify risk and navigate decision-making are increasingly being called on to assist in maintaining viable management of the public health system. Current health reforms in Alberta appear to be moving towards a renewed emphasis on governance accountability and risk avoidance. However, noticeably absent from this focus is a viable strategic planning process that takes into account relevant and timely decision making information and addresses core challenges and risks to the organization.

In the following survey, we would like to ask you, as a health care leader, for your opinions in order to gain a better understanding of the barriers to effective risk management and informed strategic planning in health care within Alberta.

Participation in the survey is voluntary and where necessary you can skip individual questions. By answering the questions of this survey, you give your consent to participate in the project being conducted by Mr. James Haney and Dr. John Church. Neither your name nor your position title will appear in the analysis or reporting of results. The findings of this survey will be incorporated into a final report that will be shared with all participating individuals.

If you have any questions or concerns, please contact James Haney at jhaney@dthr.ab.ca or 403-341-8631.

2. Part 1: Understanding why risks may be ignored in health care decision making...

In this survey:

'risk' or 'risks' are defined as the probability that a specific adverse event will occur in a specific time period or as a result of a specific (or foreseeable) situation.

'risk management' refers to the culture, processes and structures that are put in place to effectively manage potential adverse effects.

'health care leader' means a person who has authority to effect change within the health system or a health organization, and/or has a role in the administration of health programs, resources or expenditures.

'strategic planning' or 'planning' is an organization's process of defining its strategy, or direction, and making decisions on allocating its resources to pursue this strategy

Evidence Informed Risk Management: From First Alert to Strategic

1. Please indicate the degree to which you agree with each of the following statements.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Health care leaders are often limited by time / workload constraints	☐	☐	☐	☐	☐
Health care leaders are often required to make quick decisions with limited evidence or supporting rationale	☐	☐	☐	☐	☐
Health care leaders are not taught to use research to inform their decisions	☐	☐	☐	☐	☐
There are very few relevant research studies for many important health policy issues or identified risks	☐	☐	☐	☐	☐

2. How common were each of the following in your organization prior to the creation of Alberta Health Services?

	Very Common	Common	Neither Common or Uncommon	Uncommon	Very Uncommon
The organizational culture promoted open disclosure and investigation of risks	☐	☐	☐	☐	☐
Risks tended to be longstanding and known about locally but not necessarily acted upon	☐	☐	☐	☐	☐
Information was routinely available on litigation issues facing the organization	☐	☐	☐	☐	☐
There was a defined process for determining how risks should be managed	☐	☐	☐	☐	☐
Accountability for risk management was clear in the organization	☐	☐	☐	☐	☐
There were mechanisms to communicate identified risks to the Board	☐	☐	☐	☐	☐
I have identified risks that have not been acted upon	☐	☐	☐	☐	☐

Evidence Informed Risk Management: From First Alert to Strategic

3. Which of the following do you consider significant barriers to effective /successful risk management?

(Please select your top FIVE)

☐ data integrity	☐ unclear / unspecified / undeveloped approach to risk mitigation
☐ unpredictable human error	☐ political interference
☐ system / financial impediments	☐ competing vested interests
☐ unspecified or competing responsibility / accountability	☐ lack of shared or common understanding of risk severity
☐ reactionary leadership	☐ shifting or limited timeframes for reporting or acting upon
☐ a culture of slow change	☐ gaps in corporate expectations / direction
☐ untimely planning and decision making	☐ unspecified reporting mechanisms
☐ competing interests on health care leader time / attention	☐ weak or unspecified risk assessment approaches
☐ inadequate risk management understanding /skills	

Other (please specify)

4. In your experience, which of the following, if any, get priority discussion by the senior health decision makers (Select, all that apply)

☐ Information on litigation issues	☐ Information on contingency plans or disaster recovery plans
☐ Information on data management	☐ Information on how processes are monitored
☐ Information on ethical issues	☐ Information about internal audit
☐ General description of processes for determining how risk should be managed	

Other (please specify)

5. What do you see as the most significant barrier to effective risk management within health care

6. In your experience, how common is it for identified risks to be ignored (or not addressed in a timely fashion) in health care?

- ☐ Very Common ☐ Common ☐ Neither Common or Uncommon ☐ Uncommon ☐ Very Uncommon

3. Part 2: Management Action / Inaction towards Identified Risks

Evidence Informed Risk Management: From First Alert to Strategic

7. Please indicate the degree to which you agree with each of the following statements.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Risk management is done strategically in the Alberta health care system	☐	☐	☐	☐	☐
Health care leaders have adequate education on risk management and strategic planning	☐	☐	☐	☐	☐
Identified risks are often ignored in health care	☐	☐	☐	☐	☐
Health care leaders often have the necessary information to make an informed strategic decision	☐	☐	☐	☐	☐
Specific organizational risks are widely discussed by the senior leadership team	☐	☐	☐	☐	☐
The board and senior leadership are primarily accountable for effective risk management	☐	☐	☐	☐	☐
Risk management should focus on the risks to the entire organization	☐	☐	☐	☐	☐
Communication of risk issues is frequent, effective, and allows risks to be acted upon in a timely manner	☐	☐	☐	☐	☐
Not all risks have to be acted upon	☐	☐	☐	☐	☐

4. Part 3: Information and Processes Required to Strategically Manage Identifi...

Evidence Informed Risk Management: From First Alert to Strategic

8. Please indicate the degree to which you agree with each of the following statements.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Effective risk management considers both the internal and external organizational environment	☐	☐	☐	☐	☐
An effective risk management framework provides key principles and concepts, a common language and clear direction and guidance to an organization	☐	☐	☐	☐	☐
Risk management should be a process that takes into account all available data in the evaluation and review of risk management decisions	☐	☐	☐	☐	☐
Risk management decisions should be transparent	☐	☐	☐	☐	☐
Risks are best managed by ad hoc / issue focused processes	☐	☐	☐	☐	☐
Only the highest / senior levels of the organization should have input into management of risks	☐	☐	☐	☐	☐
Information flows freely across organizational boundaries	☐	☐	☐	☐	☐
Risk processes are a key component of strategy and planning processes	☐	☐	☐	☐	☐
Governmental leadership or mandating of a defined risk management framework (or formal risk structure) would be beneficial	☐	☐	☐	☐	☐
Insurance does not have a role in risk management	☐	☐	☐	☐	☐

9. In your opinion, what are the essential components of a risk management program?

10. How can identified risks be analyzed and integrated more effectively into a health organization?

Evidence Informed Risk Management: From First Alert to Strategic

5. Part 4: Translation of Risk Awareness into Strategic Action

11. Please indicate the degree to which you agree with each of the following statements.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Planning and strategic action increases the chances of organizational success	☐	☐	☐	☐	☐
Strategic planning processes should consider/address the major risks facing the organization	☐	☐	☐	☐	☐
The strategic planning function should play an important function in risk management as a mechanism to ensure calculated mitigation of risks	☐	☐	☐	☐	☐
Identified risks should be mitigated outside of the broader organizational planning process	☐	☐	☐	☐	☐
Strategic planning does not have a role in risk management	☐	☐	☐	☐	☐

12. How, if at all, can formal planning and decision making structures be linked to risk management?

13. What types of information (or data or evidence) that are not currently used would you most want to use to improve decision making in setting priorities and allocating resources?

14. Do you have any other comments you wish to share?

6. Thank You

Thank you for taking the time to complete this survey. In the future we will report back to you on the results.

Appendix 2: Ethics Committee Approval and Invitation to Participate

Arts, Science & Law Research Ethics Board (ASL REB)
Certificate of REB Approval for Fully-Detailed Research Project

Applicant: John Church
James Haney

Department / Faculty: Political Science/Arts

Project Title: Evidence Informed Risk Management: From First Alert to Strategic Planning

Grant / Contract Agency (and number): Executive Training for Research Application Fellowship – Canadian Health Service Research Foundation and David Thompson Health Region

Application number (ASL REB member) 2058 (CDH09-337)

Approval Expiry Date: 30 March, 2010

CERTIFICATION of ASL REB Approval

I have reviewed your application for ethics review of your human subjects research project and conclude that your project meets the University of Alberta standards for research involving human participants (GFC Policy Section 66). On behalf of the *Arts, Science & Law Research Ethics Board* (ASL REB), I am providing expedited approval for your project.

This research ethics approval is valid for one year. To request a renewal after **March 30, 2010**, please contact me and explain the circumstances, making reference to the research ethics review number assigned to this project. Also, if there are significant changes to the project that need to be reviewed, or if any adverse effects to human participants are encountered in your research, please contact me immediately.

ASL REB member (name & signature):

C. Donald Heth

Date: 30 March, 2009

Attachment 1

Invitation to participate in a survey to examine the barriers to effective risk management and informed strategic planning in health care.

With the Alberta health sector evolving in complexity, structure and scope, strategies to identify risk and navigate decision-making are increasingly being called on to assist in maintaining viable management of the public health system. Current health reforms in Alberta appear to be moving towards a renewed emphasis on governance accountability and risk avoidance. However, noticeably absent from this focus is a viable strategic planning process that takes into account relevant and timely decision making information and addresses core challenges and risks to the organization.

We are contacting you to ask for your participation in an on-line survey being conducted to gain a better understanding of the barriers to effective risk management and informed strategic planning in health care within Alberta. Attached to this e-mail for your information are brief biographies of the research team members.

Participation in the survey, which is voluntary, may offer you an opportunity to reflect on how risk management and strategic planning have been considered / implemented in your experience, and allow you to share your perspectives on whether there are any common barriers that prevent effective system safeguarding and administration.

There are no known risks from participating in the study. The project has received ethics approval from the University of Alberta. In terms of confidentiality, neither your name nor your position title will appear in the analysis or reporting of results. All respondents will be assigned a number code during data inputting to protect their identity. Mr. James Haney and Dr. John Church are the only ones who will have direct access to the original information collected from the surveys.

All information will be stored on a password-encrypted hard drive in a secure area at the University of Alberta. All printed materials generated through the project will be stored in a locked filing cabinet for five years. After that time, all data will either be submitted for subsequent ethics approval or destroyed.

The findings from this study may be published in peer-reviewed journals or presented at academic conferences and other practitioner forums. When any of these venues are used to talk about the research, your name will not be used. The information gathered for this study may be looked at in the future to help us answer other study questions. If so, the ethics board will first review the study to ensure the information is used ethically. As part of this process, you will be contacted to obtain additional consent.

If you decide to complete the survey, you are giving us permission to use your responses as part of the research. However, even if you agree through completion of the survey, you can withdraw prior to the closing date of survey (June 1) by contacting us. If you decide not to be in the study or drop out, there are no known negative consequences.

If you are interested in completing the survey, please contact the Principal Investigator, James Haney, in Red Deer at jhaney@dthr.ab.ca.

Thank you,

John Church, Ph.D.
Associate Professor
Centre for Health Promotion Studies
and Department of Political Science
1001 College Plaza
8215-112 Street
Edmonton, AB T6G 2C8
Voice: 780.492.9054

James Haney, BSc., MPH, FACHE, CHE
Executive Director, Corporate & Legislative Affairs
AHS-David Thompson Health Region
43 Michener Bend
Red Deer, AB T4P 0H6
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Appendix 3: Selected Study Organization Survey Questions / Findings

Primary Research Questions:

1. *What causes identified risks to be ignored in health care?*
2. *How is perceived inaction justified?*
3. *What information and risk management process is required to strategically manage identified risks?*
4. *How should the awareness of risk be translated into the strategic planning process?*

Key Finding Themes:

- a) *Management / System Barrier to Organizational Risk Management*
- b) *Local Organization Strategic Planning / Risk Management Barriers*
- c) *Barriers to Risk Management within the Decision-Making Process*
- d) *The Beneficial Use of Information / Evidence*
- e) *Elements of Successful Strategic Organizational Risk Management*

Related Research Question / Key Finding Theme	Q#	Survey Question (Author) N=22	Survey Question Type	Survey Findings		
1 / theme a)	Q1	Health care leaders are often limited by time / workload constraints (Jewell & Bero, 2008)	Degree of Agreement	Strongly Agree & Agree 100.0%	Neither Agree nor Disagree 0.0%	Disagree & Strongly Disagree 0.0%
1 / theme a) and c)	Q2	Health care leaders are often required to make quick decisions with limited evidence or supporting rationale (Graham et al., 2006; Lavis et al., 2004)	Degree of Agreement	Strongly Agree or Agree 84.2%	Neither Agree nor Disagree 10.5%	Disagree or Strongly Disagree 5.3%
1 / theme a)	Q3	Health care leaders are not taught to use research to inform their decisions (Jewell & Bero, 2008)	Degree of Agreement	Strongly Agree or Agree 42.1%	Neither Agree nor Disagree 21.1%	Disagree or Strongly Disagree 36.8%
1 / theme a) and c)	Q4	There are very few relevant research studies for many important health policy issues or identified risks (Jewell & Bero, 2008; Jardine et al., 2003)	Degree of Agreement	Strongly Agree or Agree 61.9%	Neither Agree nor Disagree 28.6%	Disagree or Strongly Disagree 9.5%
1 / theme b) and c)	Q6	Risks tended to be longstanding and known about locally but not necessarily acted upon (Balding, 2008)	Degree of Prevalence	Very Common or Common 42.9%	Neither Common or Uncommon 19.0%	Uncommon or Very Uncommon 38.1%

Related Research Question / Key Finding Theme	Q#	Survey Question (Author) N=22	Survey Question Type	Survey Findings		
2 / theme b)	Q9	Accountability for risk management was clear in the organization (Minsky, 2007)	Degree of Prevalence	Very Common or Common	Neither Common or Uncommon	Uncommon or Very Uncommon
				47.6%	14.3%	38.1%
2 / theme b)	Q11	I have identified risks that have not been acted upon	Degree of Prevalence	Very Common or Common	Neither Common or Uncommon	Uncommon or Very Uncommon
				42.9%	14.3%	42.9%
2 / theme b)	Q15	In your experience, how common is it for identified risks to be ignored (or not addressed in a timely fashion) in health care? (Minsky, 2007)	Degree of Prevalence	Very Common & Common	Neither Common or Uncommon	Uncommon & Very Uncommon
				52.4%	28.6%	19.0%
2 / theme a) and b)	Q17	Health care leaders have adequate education on risk management and strategic planning (Jeffs et al., 2006)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				16.7%	50.0%	33.3%
2 / theme a) and c)	Q18	Identified risks are often ignored in health care (Minsky, 2007)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				55.6%	11.1%	33.3%
2 / theme b)	Q19	Health care leaders often have the necessary information to make an informed strategic decision (Minsky, 2007)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				31.6%	15.8%	52.6%
2 / theme e)	Q22	Risk management should focus on the risks to the entire organization (Minsky, 2007)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				83.3%	5.6%	11.1%
2 / theme d)	Q23	Communication of risk issues is frequent, effective, and allows risks to be acted upon in a timely manner (Minsky, 2007)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				0.0%	23.8%	76.2%

Related Research Question / Key Finding Theme	Q#	Survey Question (Author) N=22	Survey Question Type	Survey Findings		
3 / theme e)	Q28	Risk management decisions should be transparent (Jardine et al., 2003)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				100.0%	0.0%	0.0%
3 / theme e)	Q31	Information flows freely across organizational boundaries (Minsky, 2007)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				5.6%	5.6%	88.9%
3 / theme e)	Q32	Risk processes are a key component of strategy and planning processes (Brazeau, 2008)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				90.0%	10.0%	0.0%
4 / theme e)	Q39	The strategic planning function should play an important function in risk management as a mechanism to ensure calculated mitigation of risks (Neilson, Martin & Powers, 2008; Jeffs et al., 2006)	Degree of Agreement	Strongly Agree or Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
				100.0%	0.0%	0.0%

Appendix 4: Study Organization Survey Results

Survey Response Summary (excluding open-ended) N=22

Part 1.	Please indicate the degree to which you agree with each of the following statements.			
	Answer Options	Strongly Agree & Agree	Neither Agree nor Disagree	Disagree & Strongly Disagree
Q1	Health care leaders are often limited by time / workload constraints	100%	0%	0%
Q2	Health care leaders are often required to make quick decisions with limited evidence or supporting rationale	85%	10%	5%
Q3	Health care leaders are not taught to use research to inform their decisions	40%	20%	40%
Q4	There are very few relevant research studies for many important health policy issues or identified risks	59%	27%	14%
Part 2.	How common were each of the following in your organization prior to the creation of Alberta Health Services?			
	Answer Options	Very Common & Common	Neither Common or Uncommon	Uncommon & Very Uncommon
Q5	The organizational culture promoted open disclosure and investigation of risks	73%	14%	14%
Q6	Risks tended to be longstanding and known about locally but not necessarily acted upon	45%	18%	36%
Q7	Information was routinely available on litigation issues facing the organization	32%	14%	55%
Q8	There was a defined process for determining how risks should be managed	50%	27%	23%
Q9	Accountability for risk management was clear in the organization	45%	18%	36%
Q10	There were mechanisms to communicate identified risks to the Board	64%	23%	14%
Q11	I have identified risks that have not been acted upon	45%	14%	41%
Part 3.	Which of the following do you consider significant barriers to effective /successful risk management? (Please select your top FIVE)			
	Answer Options (Top 5 Responses)	Response Percent		
Q12	system / financial impediments	68.2%		
	competing interests on health care leader time / attention	59.1%		
	data integrity	54.5%		
	unspecified or competing responsibility / accountability	50.0%		
	untimely planning and decision making	40.9%		

Part 4	In your experience, which of the following, if any, get priority discussion by the senior health decision makers (Select, all that apply)			
Q13	Answer Options			Response Percent
	Information on contingency plans or disaster recovery plans			67%
	Information on litigation issues			62%
	Information about internal audit			38%
	General description of processes for determining how risk should be managed			38%
	Information on data management			19%
	Information on how processes are monitored			14%
	Information on ethical issues			19%
	Other			0%
Part 6	In your experience, how common is it for identified risks to be ignored (or not addressed in a timely fashion) in health care?			
Q16	Answer Options	Very Common & Common	Neither Common or Uncommon	Uncommon & Very Uncommon
		55%	27%	18%
Part 7.	Please indicate the degree to which you agree with each of the following statements.			
Q16	Answer Options	Strongly Agree & Agree	Neither Agree nor Disagree	Disagree & Strongly Disagree
	Risk management is done strategically in the Alberta health care system	0%	30%	70%
Q17	Health care leaders have adequate education on risk management and strategic planning	16%	47%	37%
Q18	Identified risks are often ignored in health care	53%	16%	32%
Q19	Health care leaders often have the necessary information to make an informed strategic decision	35%	15%	50%
Q20	Specific organizational risks are widely discussed by the senior leadership team	26%	53%	21%
Q21	The board and senior leadership are primarily accountable for effective risk management	67%	24%	10%
Q22	Risk management should focus on the risks to the entire organization	84%	5%	11%
Q23	Communication of risk issues is frequent, effective, and allows risks to be acted upon in a timely manner	0%	23%	77%
Q24	Not all risks have to be acted upon	64%	14%	23%

Part 8.	Please indicate the degree to which you agree with each of the following statements.			
	Answer Options	Strongly Agree & Agree	Neither Agree nor Disagree	Disagree & Strongly Disagree
Q25	Effective risk management considers both the internal and external organizational environment	100%	0%	0%
Q26	An effective risk management framework provides key principles and concepts, a common language and clear direction and guidance to an organization	100%	0%	0%
Q27	Risk management should be a process that takes into account all available data in the evaluation and review of risk management decisions	95%	5%	0%
Q28	Risk management decisions should be transparent	100%	0%	0%
Q29	Risks are best managed by ad hoc / issue focused processes	5%	26%	68%
Q30	Only the highest / senior levels of the organization should have input into management of risks	5%	0%	95%
Q31	Information flows freely across organizational boundaries	5%	5%	89%
Q32	Risk processes are a key component of strategy and planning processes	90%	10%	0%
Q33	Governmental leadership or mandating of a defined risk management framework (or formal risk structure) would be beneficial	62%	24%	14%
Q34	Insurance does not have a role in risk management	0%	15%	85%
Part 11.	Please indicate the degree to which you agree with each of the following statements.			
	Answer Options	Strongly Agree & Agree	Neither Agree nor Disagree	Disagree & Strongly Disagree
Q37	Planning and strategic action increases the chances of organizational success	100%	0%	0%
Q38	Strategic planning processes should consider/address the major risks facing the organization	100%	0%	0%
Q39	The strategic planning function should play an important function in risk management as a mechanism to ensure calculated mitigation of risks	100%	0%	0%
Q40	Identified risks should be mitigated outside of the broader organizational planning process	24%	29%	48%
Q41	Strategic planning does not have a role in risk management	5%	0%	95%

Note: Open ended responses have been removed due to their identifiable nature given the small sample size.

Appendix 5: Key Findings from Evidence Review

Theme 1) General Management / System Barriers to Organizational Risk Management	Theme 2) Local Organization Strategic Planning / Risk Management Barriers	Theme 3) Barriers Risk Management within the Decision-Making Process	Theme 4) The Beneficial Use of Information/ Evidence	Theme 5) Elements of Successful Strategic Organizational Risk Management
<p>Main evidence messages:</p> <ol style="list-style-type: none"> 1. Complexity of the health system fosters considerable opportunity for gaps in risk management processes to occur. 2. It is not intentional management inadequacy that causes risks to be ignored, but rather the combined effect of multiple system barriers that result in failed strategic risk management execution. 3. Translation of strategy into operations is an essential component of effective risk management. 4. Data, role uncertainty, reactionary leadership, political interference, competing interests on health leader time, and financial constraints/uncertainty, explain in general what leads to inaction/ineffectiveness of health leaders on identified risks. 5. Clarity within a defined framework, dedicated resources, targeted education and focused organizational strategy, should be the underlying premise of a risk management program. 	<p>Main evidence messages:</p> <ol style="list-style-type: none"> 6. The current health planning / decision-making process is ineffective and has caused health leaders to pursue subsequent independent parallel processes (i.e. breaking the planning function into capital plans, health service plans, operational plans, etc.). 7. Strategic planning is not effective with only a top down approach. 8. Risk management needs to be broadly approached and not siloed. 9. Health leaders see value in working towards an integrated risk planning framework. 	<p>Main evidence messages:</p> <ol style="list-style-type: none"> 10. The pressure/ demand to make quick reactionary decisions fosters fragmented/ineffective decision making. 11. Health care leaders desire strategic mechanisms that coordinate risk management / decision making. 12. The availability, assessment and application of information greatly influences the decision-making process. 13. Decision making (in general and within the risk management context) is best approached as a coordinated process rather than a series of independent events. 	<p>Main evidence messages:</p> <ol style="list-style-type: none"> 14. Health care leaders face challenges in accessing and/or linking evidence into the decision-making process. 15. The transfer of research evidence into risk management practice requires a coordinated and strategic process. 16. Mechanisms need to be established to link information, expertise and assessment with decision-makers. 17. Clear accountability for implementation and evaluation is required to determine if expected results have occurred. 18. Knowledge translation/transfer is an essential component of risk management. 	<p>Main evidence messages:</p> <ol style="list-style-type: none"> 19. 'Enterprise Risk Management' is a broad term that represents an organizational view of the risk process. 20. An enterprise or organizational approach to risk management should be implemented in a customized way within a health organization. 21. Key components that should be a part of a comprehensive risk management framework include: <ul style="list-style-type: none"> • Problem formulation, • Stakeholder involvement, • Communication, • Quantitative assessment, • Iteration and evaluation, • Informed decision making, and Flexibility. 22. Risk management and strategic planning are interrelated processes that form part of the overall organizational decision-making process. 23. Successful and strategic risk management relies on an understandable framework that is supported by senior leaders and implemented across the organization in a principled / ethical way. Key considerations are: <ul style="list-style-type: none"> • Do more good than harm • Fair process of decision making • Ensure an equitable distribution of risk • Seek optimal use of limited risk management resources • Promise no more risk management than can be delivered • Impose no more risk than you would tolerate yourself • Be cautious in the face of uncertainty • Foster informed risk decision making for all stakeholders • Risk management processes must be flexible and evolutionary to be open to new knowledge and understanding • The complete elimination of risk is not possible

Appendix 6: Sample of Existing ERM Frameworks Available to the Study Organization

Name of Framework	Author	Comments
COSO Enterprise Risk Management – Integrated Framework	The Committee of Sponsoring Organizations (COSO) of the Treadway Commission (2004)	Broad based international ERM framework. Designed to be applied to any organization in the world. Does not specifically contemplate a health care context.
Risky Business – Enterprise Risk Management : A Practical Approach	The Institute of Internal Auditors (2007)	Framework approaches risk management from an international audit / compliance perspective. Designed to be applied to any Canadian Organization.
The Risk Delta System for Risk Management	Risk Waves / International Centre for Operational Risk Management (2009)	Framework focuses on gap analysis, and performance measures and is based on application of the Treadway Commission Framework within the Canadian context.
Effective Risk Management	Grant Thornton (2009)	Framework that emphasizes the value created within strategies and the value destroyed (i.e. via risks) to the business. Designed to be applicable to broad Canadian context.
Risky Business: Employing Enterprise Risk Management to the Organization	Crowe Chizek and Company LLC (2008)	A four phased risk Framework that looks at an organizations ability to address risk. Designed for an international context.
Guide to Enterprise Risk Management	Protiviti – Independent Risk Consulting (2007)	Risk management approached from a financial compliance perspective. Specific to the United States and related legislation.
HIROC Risk Management Framework / Self Assessment Modules (RMSAM)	Health Insurance Reciprocal of Canada (2011)	Canadian insurance (provider) based framework. Suggests an ERM approach focused on clinical and non-clinical risks, but is largely generalized as a national approach and potentially does not resonate or lend itself with local deployment.

Appendix 7: ERM Framework Evaluation Tool

Key Overarching Elements to be Included in a Comprehensive Risk Management Framework (Ceniceros, 2008; Jardine et al., 2003; Leadbetter et al., 2008)	Method Addressed in Potential Framework?	Weighting / Score (Set Weightings based on Organization Priority)
1. Problem formulation stage.	Yes ☐ or No ☐	Overall [?]/15
• Framework combines context with clear techniques to define problem.	Yes ☐ or No ☐	[?]/4
• The dynamic nature of risk is acknowledged.	Yes ☐ or No ☐	[?]/3
• Correct definition of the problem is fostered.	Yes ☐ or No ☐	[?]/2
• Problems are identified, formulated, and characterized within the local context.	Yes ☐ or No ☐	[?]/2
• Risk management goals, authority, responsibility and resources are understood.	Yes ☐ or No ☐	[?]/2
• Recognizes the need for collaboration and communication with stakeholders in defining problem.	Yes ☐ or No ☐	[?]/2
2. Stakeholder involvement.	Yes ☐ or No ☐	Overall [?]/15
• Framework is clear and widely applicable.	Yes ☐ or No ☐	[?]/5
• Fosters strong and defined involvement of stakeholders.	Yes ☐ or No ☐	[?]/3
• Elicits views of those affected by the risk and considers multiple perspectives.	Yes ☐ or No ☐	[?]/2
• Promotes mechanism(s) for listening, considering, and respecting opinions, ideas and contributions.	Yes ☐ or No ☐	[?]/2
• Sustains stakeholder involvement throughout the Framework.	Yes ☐ or No ☐	[?]/3
3. Communication.	Yes ☐ or No ☐	Overall [?]/15
• Framework is simple and easy to understand.	Yes ☐ or No ☐	[?]/5
• Utilizes a defined communications approach.	Yes ☐ or No ☐	[?]/3
• A clear set of terminology is defined and used.	Yes ☐ or No ☐	[?]/2
• Linkage with stakeholders (internal and external) is explicit.	Yes ☐ or No ☐	[?]/2
• Recognizes the value of a reciprocal two-way process to exchange information, knowledge and experience.	Yes ☐ or No ☐	[?]/3
4. Quantitative risk assessment components.	Yes ☐ or No ☐	Overall [?]/15
• Framework provides specific detail on conducting scientifically based risk assessment.	Yes ☐ or No ☐	[?]/3
• Includes approaches for: 1. Risk Identification	Yes ☐ or No ☐	[?]/2
• 2. Risk Assessment	Yes ☐ or No ☐	[?]/2
• 3. Risk Classification	Yes ☐ or No ☐	[?]/2
• 4. Risk Scoring (or Prioritizing)	Yes ☐ or No ☐	[?]/2
• 5. Evidence Evaluation	Yes ☐ or No ☐	[?]/2
• 6. Option Generation.	Yes ☐ or No ☐	[?]/2
5. Iteration and evaluation.	Yes ☐ or No ☐	Overall [?]/10
• Framework is able to accommodate new information.	Yes ☐ or No ☐	[?]/2
• Recognition that risk management cannot be a sequential process.	Yes ☐ or No ☐	[?]/2
• Evaluation occurs throughout the process and ensures that changing information or perspectives are recognized and linked back into the process.	Yes ☐ or No ☐	[?]/2
• Purposeful effort is made to determine the effectiveness of solutions or decisions made.	Yes ☐ or No ☐	[?]/2
• Learnings from one circumstance can be brought forward into future practice.	Yes ☐ or No ☐	[?]/2
6. Informed decision making.	Yes ☐ or No ☐	Overall [?]/15
• Framework is broad based and comprehensive to help all types of risk managers make good risk management decisions.	Yes ☐ or No ☐	[?]/5
• Decisions are principle based and consider scientific, social, cultural, ethical, political, and legal aspects.	Yes ☐ or No ☐	[?]/2
• Fosters clear decisions and policies.	Yes ☐ or No ☐	[?]/4

• Elicits the views of those affected by the decision.	Yes ☐ or No ☐	[?]/2
• Employs a deliberate method of analysis based on available information / evidence.	Yes ☐ or No ☐	[?]/2
7. Flexibility.	Yes ☐ or No ☐	Overall [?]/10
• Framework is able to address many types of risks, as well as adapt to the power structure of the organization.	Yes ☐ or No ☐	[?]/2
• Different levels of risk urgency (and associated timelines for mitigation) can be addressed simultaneously.	Yes ☐ or No ☐	[?]/2
• Acknowledgement that risk management is complex and cannot be 'one size fits all'.	Yes ☐ or No ☐	[?]/2
• Intentionally ensures that risk management process encompasses the considerations of each unique situation.	Yes ☐ or No ☐	[?]/2
• Ability to change a decision if/when new information becomes available.	Yes ☐ or No ☐	[?]/2
Key Elements of Decision Making to be included in a comprehensive Risk Management Framework	Method Addressed in Potential Framework?	Weighting / Score
1. Do more good than harm (<i>beneficence, nonmalficence</i>).	Yes ☐ or No ☐	Overall [?]/12
• Generated decisions prevent or minimize risk, or to "do good" as much as possible.	Yes ☐ or No ☐	[?]/2
• Framework acknowledges that zero risk is unattainable, but that prevention or minimization of risk is beneficial.	Yes ☐ or No ☐	[?]/2
• Emphasis on improving human health is explicit.	Yes ☐ or No ☐	[?]/2
• Consideration is made for the broad nature of risk.	Yes ☐ or No ☐	[?]/2
• Actions are promoted that will achieve the greatest risk reduction.	Yes ☐ or No ☐	[?]/2
• Priority is given to preventing risks, vs. controlling, managing or reacting to risk.	Yes ☐ or No ☐	[?]/2
2. Fair process of decision making (<i>fairness, natural justice</i>).	Yes ☐ or No ☐	Overall [?]/10
• Decisions are equitable, impartial, unbiased, dispassionate, and objective as far as possible given the circumstances of each situation.	Yes ☐ or No ☐	[?]/3
• Proposed strategies balance conflicting needs, rights, demands, and evidence.	Yes ☐ or No ☐	[?]/5
• The approach to risk decision making is clearly documented so that stakeholders can contribute.	Yes ☐ or No ☐	[?]/2
3. Ensure an equitable distribution of risk (<i>equity</i>).	Yes ☐ or No ☐	Overall [?]/10
• Risks are distributed equally in terms of benefits and burdens.	Yes ☐ or No ☐	[?]/3
• There is a process to balance who benefits with who is harmed (or the cost) by any risk.	Yes ☐ or No ☐	[?]/2
• Decisions have a high probability of fostering fair outcomes and equal treatment of all concerned.	Yes ☐ or No ☐	[?]/3
• Risk is not able to be transferred or off-loaded onto another group or organization.	Yes ☐ or No ☐	[?]/2
4. Seek optimal use of limited risk management resources (<i>utility</i>).	Yes ☐ or No ☐	Overall [?]/10
• Use of limited resources is emphasized where they will achieve the most risk reduction or overall benefit.	Yes ☐ or No ☐	[?]/5
• There is an explicit realization that resources are limited.	Yes ☐ or No ☐	[?]/2
• Decisions emphasise what is important to the organization.	Yes ☐ or No ☐	[?]/3
5. Promise no more risk management than can be delivered (<i>honesty</i>).	Yes ☐ or No ☐	Overall [?]/10
• Unrealistic expectations of risk management are avoided explicitly.	Yes ☐ or No ☐	[?]/5
• Processes are present to communicate what is known and not known.	Yes ☐ or No ☐	[?]/2
• There is a clear understanding of what can be done and not done with the risk framework (i.e. knowing limitations).	Yes ☐ or No ☐	[?]/3
6. Impose no more risk than you would tolerate yourself (<i>the Golden Rule</i>).	Yes ☐ or No ☐	Overall [?]/10
• Decision makers are not detached from decisions and are held accountable to those affected.	Yes ☐ or No ☐	[?]/5
• Decision process clearly identifies those who will bear the risk.	Yes ☐ or No ☐	[?]/5
7. Be cautious in the face of uncertainty (<i>"better safe than sorry"</i>).	Yes ☐ or No ☐	Overall [?]/10
• Decisions must be approached cautiously when faced with a potentially serious risk	Yes ☐ or No ☐	[?]/5
• Evidence, or what is required in order to make the best decision, is understood.		[?]/5
8. Foster informed risk decision making for all stakeholders (<i>autonomy</i>).	Yes ☐ or No ☐	Overall [?]/10

• Stakeholders have the opportunity to participate with all of the information required / available.	Yes ☐ or No ☐	[?]/5
• Communities or groups affected by the problem are included in the process.	Yes ☐ or No ☐	[?]/2
• The ‘right level’ of participation by stakeholders is fostered.	Yes ☐ or No ☐	[?]/3
9. The risk decision processes must be flexible and evolutionary to be open to new knowledge and understanding (<i>evolution, evaluation, iterative process</i>).	Yes ☐ or No ☐	Overall [?]/10
• New evidence can be introduced into the decision process at any time.		[?]/5
• Evaluation of the strength of evidence is explicit and ongoing (iterative).	Yes ☐ or No ☐	[?]/5
10. The complete elimination of risk is not possible (<i>life is not risk free</i>).	Yes ☐ or No ☐	Overall [?]/10
• The framework acknowledges that risk is pervasive in our society, and cannot be totally eliminated.	Yes ☐ or No ☐	[?]/2
• A cautious approach is pervasive when faced with complex risks.	Yes ☐ or No ☐	[?]/2
• Prudent action / decisions must be possible without having to wait for scientific certainty.	Yes ☐ or No ☐	[?]/4
Underlying Organizational Principles for Risk Management Decision Making (Customized to Local Organization Values and Principles)	Method Addressed in Potential Framework?	Weighting / Score
Example: Maintaining and improving health is the primary objective.	Yes ☐ or No ☐	Overall [?]/12

Appendix 8: Academic Mentors

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