

**THE PEARLS AND PITFALLS OF INTER-ORGANIZATIONAL  
COLLABORATIONS: HEALTH SYSTEMS AND NATURAL DISASTERS**

**By LAURA DAVEY, B.Sc., B.ScN.**

A Thesis Submitted to the School of Graduate Studies in Partial Fulfilment of the  
Requirements for the Degree of Master of Science

McMaster University Copyright by Laura Davey, November 2018

McMaster University MASTER OF SCIENCE (2018), Health Science Education

TITLE: The Pearls and Pitfalls of Inter-Organizational Collaborations: Health Systems and Natural Disasters

AUTHOR: Laura Davey, B.Sc. Natural Science, B.Sc. Nursing (Lakehead University)

SUPERVISORS: Dr. Meredith Vanstone

COMMITTEE MEMBERS: Dr. Lynda Redwood-Campbell, Dr. Elizabeth Alvarez

NUMBER OF PAGES: 139

## **Abstract**

**Background:** The purpose of the study is to explore the processes by which governmental and non-governmental organizations plan for collaboration in the event of a natural disaster, identifying the key features of effective formulations for emergency medical responses.

**Methodology:** Using Qualitative Description methodology, 6 key informant semi-structured interviews were conducted, exploring perspectives on collaboration, partnerships, and significant issues relevant to the disaster planning within international and local communities. Interviews were transcribed verbatim and data was coded and analyzed descriptively and interpretively in order to develop themes and categories useful for policy development and further research.

**Findings:** International humanitarian aid and domestic disaster response within the realm of health had similar issues complicating effective planning and responses despite contextual differences. Silos, public image, politics and bureaucracy serve as barriers to collaborative activities or can influence decision making and coordination. People and relationships and informal networks facilitated collaboration and problem solving on multiple levels. Recommendations for enhancing government and organizational communication, collaboration and planning were developed through analysis.

**Discussion and Conclusion:** Collaboration is crucial for effective disaster responses. Knowledge sharing and educational benefits for organizations and individuals can be

facilitated through networks or communities of practice, which may translate into improved health outcomes for communities affected by natural disaster.

## **Acknowledgements**

I would like to declare my utmost appreciation and thankfulness to my supervisory committee of Dr. Meredith Vanstone, Dr. Lynda Redwood-Campbell and Dr. Elizabeth Alvarez for their support and contributions to this research.

To my friend and colleague Emily Block, thank you for all your encouragement and thoughtful discussions leading up to this completed work. I would also like to recognize Emily for her considerate review of Chapter 2, and for facilitating the connection to such a genuine and supportive supervisor.

I would like to acknowledge Dr. Lawrence Grierson for helping me to realize my educational and career goals, and for making those linkages and enriching dialogue early in the process of transferring into the thesis stream.

My interest and direction of this research had largely been inspired by my experiences with my fellow colleagues during the 2016 wildfire in Fort McMurray, AB. The operating room team demonstrated incomparable teamwork and collaboration during that time, and for them I have the greatest admiration and respect.

Lastly, this thesis would not be possible without the steady foundation of my family and their unfaltering support. To them - all my love and gratitude.

## Table of Contents

<b>ABSTRACT</b> .....	<b>III</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>V</b>
<b>TABLE OF CONTENTS</b> .....	<b>VI</b>
<b>LIST OF TABLES AND FIGURES</b> .....	<b>VIII</b>
<b>LIST OF ABBREVIATIONS</b> .....	<b>IX</b>
<b>CHAPTER 1: INTRODUCTION</b> .....	<b>1</b>
STUDY BACKGROUND .....	1
THE ISSUE .....	1
EMERGENCY MANAGEMENT IN CANADA .....	2
SCOPE OF THE ISSUE.....	4
POTENTIAL ISSUE RESOLUTION.....	5
STUDY PURPOSE .....	6
CONTEXT .....	7
LITERATURE REVIEW .....	8
<i>Disaster and Emergency Management – Health</i> .....	8
<i>Governance</i> .....	11
<i>Organizational Partnerships</i> .....	12
<i>Non-governmental Organizations and Competition</i> .....	13
<i>Coordination</i> .....	14
<i>The Cluster Approach</i> .....	15
<i>Cross-sector Collaboration</i> .....	17
<i>Interprofessional Collaboration</i> .....	19
<i>Government – Non profit Partnerships</i> .....	20
<i>Networks</i> .....	21
<i>Communities of Practice</i> .....	23
<i>The Tacit Knowledge Problem</i> .....	24
SUMMARY .....	25
<b>CHAPTER 2: METHODOLOGY AND METHODS</b> .....	<b>27</b>
OVERVIEW .....	27
QUALITATIVE DESCRIPTION METHODOLOGY.....	28
POSITIONALITY .....	30
STUDY DESIGN .....	32
KEY INFORMANTS.....	33
RECRUITMENT AND SAMPLING .....	35
RESEARCH ETHICS .....	40
DATA COLLECTION .....	42

DATA ANALYSIS (CODING STRATEGY) .....	47
QUALITY CRITERIA .....	50
REFLEXIVITY .....	52
SUMMARY .....	55
<b>CHAPTER 3: RESULTS .....</b>	<b>56</b>
OVERVIEW .....	56
KEY INFORMANTS .....	57
ANALYSIS .....	58
<i>Inter-organizational Collaboration/ Importance of Collaboration</i> .....	58
SECTION 1: FACILITATORS AND INHIBITORS OF COLLABORATION...	63
SECTION 2: SUGGESTIONS FOR IMPROVING COLLABORATION .....	73
<i>Value of Inter-organizational Collaboration</i> .....	75
SECTION 3: ENHANCING COLLABORATION .....	77
SUMMARY .....	88
<b>CHAPTER 4: DISCUSSION .....</b>	<b>91</b>
SUMMARY/ OVERVIEW .....	91
THE CASE OF HAITI.....	92
PEOPLE AND RELATIONSHIPS .....	94
TRUST .....	96
RELEVANCE FOR EDUCATION .....	97
STRENGTHS AND LIMITATIONS .....	100
CONCLUSIONS .....	104
<b>REFERENCES.....</b>	<b>105</b>
<b>APPENDICES .....</b>	<b>111</b>
APPENDIX 2.A PROTOCOL .....	111
APPENDIX 2.B PARTICIPANT INFORMATION & CONSENT .....	115
APPENDIX 2.C ETHICAL APPROVAL.....	119
APPENDIX 2.D AMENDMENT APPROVAL.....	120
APPENDIX 2.E INTERVIEW GUIDE .....	121
APPENDIX 2.F INTERVIEW GUIDE VERSION 2.....	123
APPENDIX 2.G RECRUITMENT E-MAIL .....	125
APPENDIX 3.A Table 2: Suggestions for Improving Inter-organizational Collaboration.....	127

## **List of Tables and Figures**

Table 1: Key Informant Demographic Characteristics

Table 2: Suggestions for Improving Inter-organizational Collaboration



## **List of Abbreviations**

NGO	Non-Governmental Organization
SARS	Severe Acute Respiratory Syndrome
GO	Governmental Organization
WHO	World Health Organization
PHAC	Public Health Agency of Canada
UN	United Nations
ICS	Incident Command System
UN OCHA	United Nations Office for the Coordination of Humanitarian Affairs
IGO	Inter-governmental Organization
CoP	Community of Practice
QD	Qualitative Description
WADEM	World Association for Disaster and Emergency Medicine
UNISDR	United Nations International Strategy for Disaster Reduction
FMT	Foreign Medical Team

## DECLARATION OF ACADEMIC ACHIEVEMENT

The topic for this thesis was developed in consultation with Dr. Lynda Redwood-Campbell and Dr. Meredith Vanstone.

All content was written and completed by Laura Davey, acknowledging the contributions to the project by Dr. Meredith Vanstone, Dr. Lynda Redwood-Campbell and Dr. Elizabeth Alvarez.

## **Chapter 1: Introduction**

### **Study Background**

This study examines the challenges of disaster planning within health systems and processes of inter-organizational collaboration for effective emergency medical responses following a natural disaster. International disaster and emergency management organizations and individuals who provide health services in international disaster settings have valuable experience and knowledge about collaboration within this context. We hypothesized that lessons learned from successful international disaster responses may be applied to the Canadian domestic context, although the research in this area is limited. The focus of this project will pertain to natural disasters with health implications.

Following an introduction to the issue in the broadest sense, the scope of the problem will be highlighted within Canada, in order to show relevance for the study purpose. The literature will be explored, provide background for the study findings detailed in Chapter 3.

### **The Issue**

The potential for natural disasters and resulting health emergencies in Canada has been realized, with past events such as Alberta flooding (2013), and most recently the Alberta wildfire (2016), and projected future events like a B.C coastal earthquake (CBC, 2017) demonstrating the need for effective disaster and emergency preparedness. A

Government of Alberta report on the 2013 Southern Alberta flood detailed the impact of the disaster on communities, and prioritizes plans to improve provincial and regional responses through training, workshops, and development of teams (Government of Alberta, 2014).

### **Emergency Management in Canada**

The Government of Canada's (2012) document *National Framework for Health Emergency Management Guideline for Program Development* serves as a guidance document for the understanding of emergency health services management, and provides a general focus for areas within disaster preparedness that may be of importance. Significant elements of preparedness are stated to be emergency planning, mutual aid agreements, resource inventories, warning procedures, training, exercises, and emergency communication systems (PHAC, 2017). As this is a study that explores the phenomena of inter-sectoral and inter-organizational collaboration in time of a health crisis (as in a natural disaster) on an international level, it is acknowledged that the organizational frameworks, policies and guidance documents that direct planning and response activities in the different contexts will likely vary.

Within Canada, Emergency Health Services is comprised of emergency medical services, and emergency public health. Together they “work with partners and stakeholders to deliver services to those in need” (PHAC, 2017). Partnerships exist between governmental and non-governmental organizations described in policy documents for a local, provincial/ territorial or federal response. Despite the recognized capacities of NGOs by the federal government, the role of NGOs in a time of domestic

disaster tends to be limited to assistance with social services support, such as distribution of food, clothing, and assistance with family reunification. However, during unusual circumstances non-traditional services may be delivered, such as was seen with the isolation kit distribution during the SARS outbreak (PHAC 2017).

Emergency response is typically led by local government officials and/or the lead agency. When needs exceed the management capacity, requests for additional resources by a municipality fall first to the province, and then federally (from the province or territory), provided certain conditions are met (Emergency Management Act, 2007). Each province or territory develops their own emergency preparedness plan, with little oversight by the federal government. This system can be described as a decentralised system of knowledge, power and authority to local government, using a bottom-up approach to management, with no standardized or coordinated federal response currently in place. According to Kusumasari and colleagues (2010), a decentralized system that relies on municipal government may be described as disorganized. Dysfunction may be attributed to an approach which regards emergency management as a product rather than a daily process, and the requirement for people to make complex decisions in areas where they have limited expertise. These systems may be easily overloaded in an emergency due to leadership decision making in the context of incomplete or inaccurate information. Despite these identified weaknesses, Kusumasari and colleagues (2010) also recognize that local governments are best suited to identify vulnerable populations, and know the needs of the community and people in a system for which no likely alternative exists.

### **Scope of the Issue**

The emergency management system in Canada has been described by Raikes & McBean (2016) as a “patchwork approach within the Provinces” (p. 14), which may limit the ability for adequate preparedness and an organized emergency response. Studies surveying the perceptions of provincial trauma centres (Gomez et al. 2011) and Canadian nurses (O’Sullivan et al, 2008) cite overall impressions of need for improvements in strategic planning. A recent scoping review by Khan and colleagues (2015) identified disparities in public health emergency practice knowledge and research, concluding that gaps exist in education, training and exercises, and collaboration among jurisdictions and across health sectors.

Throughout the world, during a natural disaster, governments often partner with or benefit from the services of non-governmental organizations (NGOs) to meet the health needs of affected populations (Martin et al. 2016). Given the habitual collaboration of GOs and NGOs in times of crisis, improving coordination of medical and emergency response activities through implicit and explicit planning may reduce health impacts on affected populations during times of disaster and emergency.

The Government of Canada states in a policy directorate that “collaboration, communication and coordination are key components of effective partnerships” (2011). Martin and colleagues (2006) assert the lack of consensus on the precise meaning of collaboration within the literature around organizational partnerships in times of disaster, having multiple dimensions including length, degree of formality and objective of relationships. Communication and understanding are necessary ingredients of

collaboration. Coordination refers to cohesive and effective delivery of services through the use of policy instruments, using a variety of leadership structures that can occur at the organisational, functional or programme levels (WHO, 2017). Partnerships can be defined as intentional collaborative relationships with those who have a role in a response to a crisis (PHAC, 2017), and when organizations perceive a shared interdependence in order to manage an initiative through increased capabilities and resources (Kapucu, 2006).

### **Potential Issue Resolution**

In order to solve the issue of ineffective or fragmented disaster planning, we are interested in exploring how key informants perceive and understand the key elements identified above to relate to their activities and roles within and across organizations. Although many recognize that education and training for disasters are priorities (WHO, 2012; UNISDR, 2015), it has been suggested that adequate disaster and emergency response may not require specialized knowledge or training by health care providers (Williams et al. 2008).

By enhancing a domestic response planning within the health system in a country that experiences disasters and complex emergencies infrequently, health care providers and health systems will be better prepared to respond when necessary. Effective disaster response may then be accomplished through strengthening health system policy development, based on partnerships and collaboration through knowledge sharing and bidirectional education.

## **Study Purpose**

The purpose of this study is to explore key informant perceptions of the processes by which governmental and non-governmental organizations plan to and actualize collaboration in the event of a natural disaster in order to identify the key features of effective inter-organizational formulations for emergency medical responses.

This study asks, *What do key figures in the international disaster and emergency medicine community see as the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster?* The objective is to inform future disaster planning activities in Canada through knowledge sharing and successful collaboration with partners.

A diverse group of perspectives within organizations that contribute to the workings of health systems are desired, thus participants were recruited in order to represent various domains related to health care delivery, management and operations, logistics and communication, human resources, trainers, academics, policy makers and experts from various stakeholder groups (such as governmental and non-government humanitarian organizations). We wanted to learn the characteristics of successful health systems partnerships and collaboration from the experiences of participants within the context of a dynamic, complex event as in a natural disaster.

The objective of this qualitative research study is to inform strategic planning in health services delivery, preparedness, and organizational structure and partnerships for an effective disaster and emergency medicine response system, by learning from international disaster medical response expertise.



## **Context**

The population of the study is the leaders of the international disaster and emergency management community (health systems), which includes those involved in activities for their country of origin or as part of international foreign aid or humanitarian response. The disaster and emergency management (health sector) professionals often also overlap with disaster medicine clinically – those in the community have experience responding to disasters and crisis situations around the world with medical teams. Although distributed globally, it is a relatively small community for those continuously connected to this field - members of this community often have shared experiences in responding to the same events and may be engaged in similar conversations in a global network that has an interest in advancing the collective understanding of disasters and emergency management and health. The study population is defined as knowledgeable and experienced professionals holding leadership positions, involved in planning, management and/ or policymaking for government, intergovernmental organizations or non-governmental organizations in various high income countries.

The study setting is internationally based in order to capture the insights and lessons learned from experiences across time and space for informing policy development and future work in this field in Canada. The robust body of knowledge developed through international work, can be complimentary to domestic planning, thus the global setting. Methods for recruiting participants and collecting data will be further described in Chapter 2.

## **Literature Review**

### **Disaster and Emergency Management – Health**

Throughout the literature, disaster and emergency management is a broad and muddy domain that encompasses many different terminologies, processes, frameworks and structures.

It can be defined as the “body of policy and administrative decisions, the operational activities, the actors and technologies that pertain to the various stages of a disaster at all levels” (Lettieri et al. 2009; p117). Phases such as preparedness, response, recovery, mitigation are described as commonly used elements of a model for emergency management (Kapucu, 2008) and utilized for many years to describe the temporal stage of the event. While seemingly much attention is paid to defining phases, models and frameworks, Hogan & Burstein (2007) assert that any divisions are artificial and are merged in reality rather than divided by constructed boundaries. The varied terminology in the literature points to continued debate and negotiation amongst researchers in this body of knowledge. As a result, the wide-ranging language and lack of agreement on precise terms and definitions (Al-Madhari & Keller 1997 in Hogan & Burstein, 2007) pose a challenge for navigating a comprehensive search for the publications on the subject. In any case, disasters are “low probability, high impact events” (Kapucu, 2006; Hogan & Burstein, 2007) defined by the United Nations as “serious disruption in functioning of a community or society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the

following: human, material, economic and environmental losses or impacts”. While this definition gives broad criteria for classification, disasters are more often accepted as a general sentiment that people “know a disaster when they see one” (Hogan & Burstein, 2007; p.2).

In this project, we focus on emergency response to natural disasters which have health implications. Disaster and emergency management is an extensive field that spans over many sectors with a sizeable mass of organizations involved across the event, with different levels of involvement and at different capacities (Bhandari et al. 2014) - this abundance and diversity of organizational features cause difficulty when looking for a ‘one size fits all’ approach (Bhandari et al. 2014). As this project focuses on the health sector, a review of the broader disaster and emergency management literature is beyond the scope of this thesis.

Leaning & Guha-Sapir (2013) assert that natural disasters can be defined by origins: biologic, geo-physical or climate related, with the latter showing increased growth in recent years. The immediate health needs are prioritized in natural disasters, however more contemporarily, there is greater emphasis in realizing and reducing long term health effects through the use of epidemiological methods (Hogan & Burstein, 2007; Leaning & Guha-Sapir, 2013).

I am particularly interested in understanding the Canadian system in understanding the structure and governance of disaster and emergency management or formal processes of the health system. As disasters happen with relative infrequency in Canada, it is necessary to look to other regions for published works in terms of lessons

learned and insights into health systems within a disaster context. Although I have specified natural disasters as the subject focus of the research question, I studied a variety of disasters and emergencies when examining the literature, as often times the work being done in a different area was complimentary despite contextual differences. More broadly, “emergency”, “crisis” and “disaster” have often overlapped during appraisal of the literature, sometimes a reflection of the discipline area.

According to Waugh & Streib (2006), across the United States emergency management has been progressively integrated into conventional government functions, though not uniformly. There is significant variability in governments and structures for health systems, both within Canada and internationally. Over time, there has been a shift from a separate study according to specific hazards to the more recent ‘all hazards’, holistic or continuous process approach (Lettieri et al. 2009) According to a systematic review conducted by Lettieri and colleagues (2009), most research in this area is generated from the United States and Europe, which might reflect the preference of publication or knowledge sharing for an international audience. They suggest that although countries such as Japan and India pay particular attention to disaster management as it is pertinent to their society, the knowledge generated from their experience is not typically disseminated outside of their national boundaries.

A disaster is “a social phenomenon that results when a hazard intersects with a vulnerable community in a way that exceeds or overwhelms the community's ability to cope and may cause serious harm to the safety, health, welfare, property or environment of people” (Government of Canada, Public Safety, 2018). The challenges characteristic of

a disaster, emergency or crisis situation involve high stakes, uncertainty, and urgency. In a disaster it follows by definition that the system is overwhelmed, making management complex.

## **Governance**

In order to understand disaster management processes, it is important to comprehend the governmental context in which they are enacted. Governance is defined as possessing the ability and authority to monitor and coordinate activities (Bryson et al. 2006), which is relevant for planning, partnerships and collaboration. Simo and Bies (2007) assert that governance is necessary for maintaining goal directedness and effectiveness of cross sector collaboration, that might otherwise be compromised with continued inefficiencies (Babiak & Thibault, 2009).

According to a systematic review of health sector governance structures in 2013 by Sreeramareddy & Sathyanarayana, the global trend towards public policy reform is happening across high-income countries and low-and-middle income countries, which sees health system decentralization transform governance structures and processes in order to meet the United Nation's development priority objectives. Transfer of authority in planning, management and decision making from the national to subnational level (regional, state, district/municipal level) known as decentralization is a dynamic process that is dependent on political context (Sreeramareddy & Sathyanarayana, 2013).

## **Organizational Partnerships**

Across many domains, such as with disaster response or business, organizational partnerships are increasingly employed as a means to solve problems, acquire resources, reduce uncertainty and heed government pressures for greater accountability (Babiak & Thibault, 2009). Yet despite the attractiveness for some organizations to partner, partnerships are challenging, and not a panacea (Coulson in Babiak & Thibault, 2009; Simo & Bies, 2007; Kalkman & de Waard, 2017) that require balancing between achieving benefits and avoiding disadvantages. The literature points to a competitive – collaborative nature of all partnerships, that is especially prominent of partnerships within a given sector (Babiak & Thibault, 2009; Moshtari et al. 2016). Despite being more likely to be competitive, similar agencies are also more likely to collaborate (Simo & Bies, 2007). Partnerships are described as encompassing various forms joint ventures, sponsorships, collaborations, cooperation and alliances (Babiak & Thibault, 2009)

In a study by Babiak & Thibault (2009) of a Canadian multi-agency sport and multi-sector partnership that looked at the organizational structural and strategic challenges encountered from a variety of partner perspectives, finding that environmental constraints, communications, the diversity of participating organizational aims, dealing with perceived power imbalances, building trust and logistics were difficulties faced. Barriers to collaboration and partnerships were conflicting goals and missions between organizations, unsupportive policies and procedures, constrained resources, mistrust, inadequate managerial structures and processes and divergent organizational cultural

factors (Babiak & Thibault, 2009).

The challenging nature of partnerships is recognized by many authors studying organizations within a multitude of contexts such as business and economics, health care, public administration (Bryson et al. 2015), and of course disaster and emergency management and humanitarian aid (Stephenson, 2005; Comfort & Kapucu, 2006; Simo & Bies, 2007; Coles et al. 2018).

### **Non-governmental Organizations and Competition**

The number of humanitarian aid and non-governmental organizations providing emergency health services delivery following a natural disaster has increased significantly in recent times, and the response to large scale disasters may see hundreds of organizations converge, since no one agency can provide all the services needed (Nolte & Boenigk, 2011). Within the literature, competition between NGOs is often characterized as a negative aspect humanitarian aid - similar organizations vying for funding, territory and public image with negative outcomes linked the unwillingness of NGOs to work together, and duplication of services which leave gaps in service areas as NGOs may concentrate their efforts in certain areas of high visibility following a disaster (Subbarao et al. 2010; Stephenson, 2005). The most notable example of such competition was the international response to the 2010 Haiti earthquake - an unprecedented number of NGOs rushed to respond and establish relief operations in the country. This was perhaps illustrative of competition for resources through organizations looking for media visibility and thus increased donor funding; ownership of their projects at the nucleus of

the NGO aid (Stumpenhorst et al., 2011). Given that saving lives is the common goal of humanitarian relief, professionals are resistant to acknowledge that “competition informs and affects their work” (p. 304, Orgad, 2013).

Possible reasons of the competitive behaviour of NGOs or those who choose not to collaborate may view collaboration as a threat to organizational independence, loss of donor funding, and loss of human resources/ volunteers (Gazley & Brudney, 2014), also restricting the success of the service delivery (Stumpenhorst, et al. 2011).

### **Coordination**

The paradox of modern emergency management is such that fastidious organization and planning is required as well as the need for innovation, adaptation and improvisations as the plans rarely deal with events seamlessly (Waugh & Streib, 2006). Coordination is a system of synchronizing or arranging the activities of relevant stakeholders in order for achievement of a specific purpose (Federal Emergency Management Agency, 2007), which may include coordinating information and communications, or actions (Loftin et al 2016). A problematic feature of the literature on coordination within the context of disasters is that related terms such as cooperation and collaboration are often used interchangeably (Jahre & Jenson, 2010; Martin et al. 2016). Stephenson (2005) stresses that coordination is comprised of multi-level, multi-layered relationships which demand policy instruments in order to be successful. In the world of humanitarian aid and providing health services in a disaster, effective coordination remains elusive (Stephenson, 2005; Parmar et al. 2007). Numerous examples of



coordination difficulties exist in the literature, documented during particular disasters that required international humanitarian response such as 2010 Haiti earthquake (Leaning & Guha-Sapir, 2013), 2004 Asian tsunami (Zoraster, 2005; Jahre & Jenson, 2010) and domestic disasters that tested the emergency management systems as with Hurricane Katrina in the United States in 2005.

A review of coordination models employed in large scale international humanitarian crises found several models of coordination for health services delivery (the cluster approach, 4Ws, and the Sphere Project) with the UN's Cluster approach being most often cited, however the authors called for research on the efficiency and effectiveness of these coordination models (Loftin et al. 2016). The Incident Command System (ICS) developed in the United States, is another model of coordination that has been used with success (Waugh and Streib, 2006).

Barriers to coordination can stem from organizational, jurisdictional and legal factors, Kapucu (2008) notes that coordination commences with developing relationships between people. Similarly, Adelaine and colleagues (2016) noting that personnel was the key success in collaborations for coordination of across hospital networks.

### **The Cluster Approach**

United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) established “clusters” in 2005 to coordinate roles and responsibilities and resources for particular areas in humanitarian aid. The Health Cluster is comprised of several global

partners, made up of NGOs, intergovernmental organizations (IGOs), UN agencies, authorities at the national and local level, academic and training institutions, and donors, with World Health Organization acting as the lead agency. The health cluster aims to increase central and local capacity, and provides leadership and an explicit coordination and collaboration mechanism for participating organizations (World Health Organization, 2017). The cluster is said to provide a forum or communication platform for NGOs involved in a response (Zoraster, 2005; Stumpfenhorst et al, 2011), although Jahre & Jensen (2010) argue that many NGOs and professionals do not support this approach and are critical of the concept, citing their feeling of clusters being compartmentalized, time consuming and often lacking continuity through to recovery, and largely characterized by “bureaucratic complexity” (Leaning & Guha-Sapir, 2013). According to Zoraster (2010), the cluster system may be a good concept, but requires significant improvement in order to provide actual meaningful coordination. Another problem often realized in humanitarian aid is the short duration of assignments, high turnover or lack of continuity of personnel, and deficient knowledge of local systems by people with decision making authority, as was described by Zoraster (2005) with respect to the Asian tsunami in 2004. These factors have a limiting action on cooperation and participation in cluster activities. Although these issues are recognized as challenges in the cluster approach, the cluster is also said to work “reasonably well”, based on health care provider perception (Stumpfenhorst, et al. 2011). Further research into the health outcomes for communities where relief is provided health cluster coordinated organizations is needed.

### **Cross-sector Collaboration**

Throughout the literature, collaboration, cooperation and partnerships are used somewhat interchangeably or their meanings are closely related, which complicates the understanding of this very complex concept. The literature was reviewed regarding cross sector collaborations in the context of the general business and management literature, literature specific to disasters, and examined collaborations within the fields of international humanitarian aid or domestic emergency management. A small number of articles related specifically to collaborations within health systems and some literature related to cross sector collaborations in research and development, academia and business - studied in order to explore if insights could be applied or might be generalizable to the context of the research question.

Cross sector collaboration has been described by Bryson and colleagues (2006) as “the linking or sharing of information, resources, activities and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved in one sector separately” (p44) According to their conceptualization, sectors encompass the divisions of business, non-profit, community, government, but can also be defined as public, non-profit and private (Eller, Gerber & Robinson, 2017), civil and military (Kalkman & de Waard, 2017)

In order to address increasingly complex problems, cross sector collaboration is generally seen as necessary and appealing (Bryson et al. 2006; Stephenson, 2005; Waugh & Streib, 2006; Simo & Bies, 2007; Gazley, 2010; Janssen et al. 2010; Moshtari & Goncalves, 2016; Eller et al, 2018) especially in recent times. Collaborations often arise

out of need (Bryson et al. 2006; Janssen et al. 2010) such as when specific capabilities are desired (Kalkman & de Waard, 2017), failure of one sector to attempt to solve the problem (Bryson et al. 2006; Coles et al. 2018), or a generally held view which assumes collaboration to be best and will lead to better outcomes (Stephenson, 2005; Bryson et al. 2006).

The understanding of the particulars of inter-organizational or cross-sectoral collaborations are complicated by the various levels or multidimensional nature (Gazley, 2017) that contribute to and become entangled when studying the concept such as interpersonal and inter-organizational levels, strategic and operational levels and the individual, team, institutional and network levels. Gazley (2017) points to several problematic features of the body of literature addressing inter-organizational collaborations - many studies lack generalizability to broader contexts, most studies are discipline-centric and do not consider work previously conducted by others outside of the particular discipline, or did not incorporate the recommendations made by Gray (1989) who called for research of collaborations in terms of evolution and adaptations over time. As this thesis study concentrates on planning and response, it is useful to approach the literature looking at both operational and strategic dimensions.

Often new cross sector collaborations in emergency management require a great deal of flexibility and significant changes from standard operating procedures, however the ability to form new collaborations can sometimes be limited by policy or practical resource constraints (Eller et al. 2018). Moshtari and Goncalves (2016) state that collaboration and competition may occur simultaneously, and a number of contextual,

inter- and inner-organizational factors present opportunities and challenges influencing these processes. Examining the ways in which collaboration occurs is expanding within the literature; Bryson and colleagues (2015) note the growth of studies investigating the mandated or voluntary inception of collaborations.

Studies of effective coordination in humanitarian relief networks point to the inherent competition built into the structure of the environment and underpinning operational relations between organizations, working against the ideal of a general receptiveness to cooperation within the network (Stephenson, 2005). Competition for limited resources, the need for publicity/media attention and to be first on the scene, the number of large agencies and the cost of participation over other activities can discourage the receptiveness to coordination (Stephenson 2005).

### **Interprofessional Collaboration**

From the level of the organization, collaborations are “inherently interdisciplinary” (Bryson et al. 2015). In health service delivery, interprofessional collaboration is lauded as a means to “enable optimal health outcomes” (CIHC, 2010; p6) through communications and partnerships that value shared decision making, respect and trust. Although it is recognized in interprofessional care literature that collaboration is imperative, the sharing of power is generally based on experience and knowledge (Lingard et al. 2012). The defined areas of expert knowledge is a hallmark of professional autonomy and professional organizations (Diefenbach & Sillince, 2011).

### **Government – Non profit Partnerships**

When examining collaborative relationships between governments and NGOs, it is important to note that size of organization (operating budget), hierarchal/political structure and past experiences may influence the willingness of a particular organization to collaborate (Gazley & Brudney, 2014; Nolte & Boenigk, 2011). Communication, common norms and trust are necessary ingredients for partnerships, both at the point of formation, and for continued efforts within the relationship (Kupucu, 2006; Nolte & Boenigk, 2011). For maintenance of these collaborative relationships, “work is required to nurture relationships and address logistical issues” (p. 407, Gazley & Brudney, 2014).

Within the context of uncertainty, complexity, and informational constraints, partnerships function to strengthen the effectiveness of the partners together, unable to accomplish goals individually. Governments benefit from the expertise of NGOs, access to groups, and resources (such as volunteers and medicines), while the NGOs may benefit from the strength of governments and allocation of resources through partnership (Gazley & Brudney, 2014).

It is helpful to look at the relationships of the people and organizations – often used interchangeably, partnerships can be at the organizational level or the individual level however the intention to collaborate is formalized and recognized. I would argue that this is the defining feature of a partnership. The other piece to the collaboration is the informal networks or the individuals within an organization, both at the leadership level and the mid-level.

A difficulty exists in the way in which collaboration is examined, and as Gazley

(2017) points out, “that the human beings who lead the organization control the decision making authority” (p. 1) – in other words: *it’s people*. Mutuality, shared decision making, trust, experience and respect for one another are key ingredients in the course of collaboration (Nolte & Boenigk, 2011).

The structure of the partnership is also of importance, and can be categorized according to three different formations: shared governance network whereby partners have equal status; network administrative organization network; and lead organization network which is most hierarchal, least flexible and described as more bureaucratic yet often more efficient (Nolte & Boenigk, 2011). Though the UN Health Cluster can be categorized as lead organization network structure, the cluster does not carry authority to govern, but rather coordinates based on the cooperation of participating NGOs.

Measuring the success of collaborations poses a challenge, and will likely vary depending on perspective (individual, organization, community, etc.), however timeliness and quality (described as appropriateness, effectiveness, acceptability and efficiency) of services were outcome measures in a study by Nolte & Boenigk (2011).

## **Networks**

Due to the distributed nature of organizations and individuals involved in disaster response, it is helpful to understand the role of networks in collaboration.

Networks exist in almost all facets of nature (Strogatz, 2001). More recently, interest and research into complex systems and networks has erupted broadly (Strogatz, 2001) and across the physical and social sciences (Borgatti et al. 2009). Network

research is a “hot” area in the literature currently, featured across physical and social sciences (Borgatti et al. 2009). Networks differ from groups in that they do not have natural or clear boundaries, such that members of a network (often referred to as nodes) are not defined by boundaries that confer ‘insider’ or ‘outsider’ status as with groups, but by ties (Borgatti and Halgin, 2011). These ties might be classified as ‘state’ ties (persist in an open ended fashion) or ‘event’ ties (time limited) which function as paths or channels for some type, such as knowledge or of flow of information between nodes (Borgatti and Halgin, 2011).

Network theory is concerned with the interacting mechanisms and processes (Borgatti and Halgin, 2011) it is imagined that individuals are embedded in “thick webs of social relationships and interactions” (Borgatti et al. 2009). Density of a network refers to the number of ties that link the individual actors together which impacts the behavior of actors across the network (Rowley, 1997). With increased density, there is an increase in norms and implicit coordination causes behavior across the network to become more similar, placing strong constraints on any one organization actions (Rowley, 1997)

It has become recognized in the business and management industry that while organizational success largely depends on capacity to share knowledge, historical efforts to expand organizational activities and collaboration through creation of databases and technology to support knowledge sharing have been less impactful than investing in collaborative activities (Abrams et al. 2003). Although consulting a source such as a database to gain relevant knowledge might be a potential solution to solve a problem, Abrams and colleagues (2003) suggest that friends and colleagues are more often turned



to for information needs and actually more useful. While this might not be aligned with evidence informed practices, it is common place in health care to look to those with expertise for answers. The emergent trend towards “communities of practice” may further this idea.

### **Communities of Practice**

Communities of Practice may be helpful to understanding how knowledge can be shared, ideas to tackle problems can be generated, and learning can occur within the disaster and emergency medicine community.

Introduced in the 1990s, by Wenger & colleagues, the term community of practice (CoP) has become a trend in the business world, educational community, and most recently increasingly popular in health professions (Li et al., 2009). Described as a novel organizational form, CoPs are characterized by creativity and fluid nature of ideas, spontaneously and informally formed through self selection (Wenger & Snyder 2000). Members must have passion and commitment for the group and knowledge exchange facilitates problem solving, new strategic visions, learning and change (Wenger & Snyder, 2000). Communities of practice can be labelled as ‘knowledge banks’ and places of innovation development, and although similar to informal networks, they differ markedly from formal working groups and project teams. The “output knowledge” is intangible (Wenger & Snyder, 2000), thus making assessment of value of these organizations challenging. Within the business and management literature, CoP has come to be seen as a tool employed by management for creating a space for innovation (Swan

et al 2002; Li et al. 2009).

Another challenging dimension of understanding the concept of CoP is the evolutionary nature and lack of standardized operating definitions about the term, as well as consistency in the literature surrounding the concept (Li et al. 2009). However, tempting to look at these networks or communities focusing on health within the disaster and emergency management sector as ‘communities of practice’, these groups or organizations of people are sharing knowledge and expertise and learning within the informal organization (Li et al. 2009).

### **The Tacit Knowledge Problem**

When referring to ‘the tacit knowledge problem’, the key dilemma is that the very definition of tacit knowledge is that which is unspoken. Rather than join those authors that have waded into the epistemological or ontological debate concerning tacit knowledge, I prefer to call attention to the specific issues 1) the lack of agreement in understanding within the literature 2) the incompleteness or vagueness of the term 3) questions of where does this tacit knowledge exist? 4) how is this knowledge communicated?

It is important to note that within this study there is no presumption to have discovered or accessed the tacit knowledge of the key informants, and by extension organizations, or that the tacit is made explicit, but rather tacit knowledge within the community of professionals helps and hinders collaboration.

To illustrate tacit knowledge, recall a most treasured family dish, perhaps a

traditional recipe passed on for generations. The special something which makes it so delicious that's not easy to identify, is what I liken to tacit knowledge. Tacit knowledge is not just information, such as ingredients and steps in a recipe - information requires interpretation and processing to give meaning, or sense making (Busch, 2008).

The myriad of parallel terms and qualities (thoughts, ideas, perspectives, know-how, subconscious, intuition, expertise) do little to resolve the clarity of tacit knowledge. In business, tacit knowledge is that which exists in the organization that instills the competitive advantage, formed through the interplay of individual interactions, proximity to processes and environmental culture that exists at the organizational level (Busch, 2008). Kupers, (2005) in Busch (2008) stated tacit knowledge is extensively personified within individuals, however not exacted with any ease –it could be the expertise, unspoken rules, knowledge shared through narratives and conversations that shape behavior through a cyclical process within the organization. Busch (2008) acknowledges the role culture plays in influencing the development of organizational knowledge, contrasting a western philosophy of 'need-to-know' communication and involvement, with the Japanese attitude towards wide involvement of many people.

Polyani's work on tacit knowledge in 1967 brought to light the facet of knowledge, previously unearthed. He describes tacit knowledge as the assumed, unsaid, unspoken, consistent with the literal definition of tacit as "not openly expressed or stated, but implied, understood inferred" (OED online, n.d.). In contrast to explicit knowledge – that is codified information that easily shared through peer reviewed publications, working papers, policy documents (Li et al. 2009) – tacit knowledge is that which is

contextual, the eyepiece or lens that allows the explicit knowledge to be transferred to the context in which it is used. In Duguid's 2005 article titled *The art of knowing*, he describes tacit knowledge as that which is displayed or exemplified, not knowledge that is transmitted, and it is this tacit knowledge that lies within a community that molds the identity and trajectory of a practitioner or member of the community.

Eraut (2010) points to problems of incomplete description of the term, leading to varied understanding. Representation (the process of making explicit) and awareness further complicate the comprehension of tacit knowledge – he uses an example that an individual may become “socialized into the norms of an organization without an awareness of what the norms are” (Eraut, 2010). Within the literature, there are several camps that believe tacit knowledge can become explicit (Busch, 2008), dimensions are or may be explicit, or is excluded from being explicit.

## **Summary**

Earlier, the study aim, scope and purpose was introduced, drawing on the literature of disaster management, governance, coordination, partnerships, networks and knowledge to help inform the research question: *What do key figures in the international disaster and emergency medicine community see as the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster?* Chapter 2 will describe in detail the chosen methodology and methods used to generate the study findings which are presented in Chapter 3: Results, followed by a discussion of the findings in Chapter 4: Results.

## Chapter 2: Methodology and Methods

The purpose of the study is to explore key informant perceptions of the processes by which governmental and non-governmental organizations plan for collaboration in the event of a natural disaster, and identify the key features of effective inter-organizational formulations for emergency medical responses. The study asks, *What do key figures in the international disaster and emergency medicine community see as the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster?*

Following a detailed introduction to the chosen methodology used in the study, I will outline the theoretical and personal orientations to this research and provide descriptions of the particular methods and techniques used for data collection and analysis. Lastly, I will suggest some criteria by which the quality of this research should be judged, and remark on the strengths and limitations of this research study.

### Overview

As a child, my most cherished books were those of J.R.R Tolkien – a wonderful story teller, the detailed account of surreptitious adventures transported me to the world constructed by his craft of language. On reflection of why I enjoyed his writings, I realize it was his descriptive narrative that defined my imaginative world. Description in any case, is meant to enhance understanding and clarity of the subject by providing sufficient detail in order to express “the essential nature of a thing or concept; a portrayal in words”

(Oxford English Dictionary online, n.d.). Qualitative relates to the nature, kind or properties (OED online, n.d.), so it follows that literally qualitative description (QD) is concerned with the essential characteristics of the concept, portrayed in words. A qualitative approach works well for this topic because the goal of this study is to explore inter-organizational planning and collaboration, allowing for enhanced understanding of in-depth issues, rather than to examine a larger quantity of surface views. Knowledge about inter-organizational planning and collaboration for emergency response is still emerging, and so an exploratory approach is appropriate to identify the relevant issues and factors.

### **Qualitative Description Methodology**

This is a qualitative study using qualitative description methodology as described by Sandelowski (2000 & 2010). Neergaard et al (2009) describes the methodology as “founded in existing knowledge, thoughtful linkages to the work of others in the field and clinical experience of the research group” (p.2). Sandelowski (2010) states that “the value of qualitative description lies not only in the knowledge its use can produce, but also as a vehicle for presenting and treating research methods as living entities that resist simple classification” (p.83). The flexible nature of this research methodology is preferable for an exploratory study and most appropriate for compilation and synthesis of the relationships that can be found amongst isolated pockets of knowledge. Another strength of qualitative description is the absence of a prior theory attached to the data, thus ensuring analysis remains close to participants’ point of view (Neergaard et al. 2009). This is not to say theories and frameworks cannot be relied upon in a study using QD

methodology, but that there is not the expectation to remain committed to a particular theory as the data is collected and analysed (Sandelowski, 2010).

Although qualitative description has been discussed in the literature as a category of qualitative research that does not have particularly well laid out boundaries and methods, and has been critiqued for its seeming simplicity (Neergaard et al. 2009), Sandelowski (2010) attributes the confusion regarding qualitative description to the heterogeneity of “within-method variation”. Sandelowski (2010) asserts that it is a distinct methodology which is foundational to other qualitative research methods, the outcome of which are “detailed and nuanced interpretive products” (p.78). Notwithstanding the diversity of methods and the dynamic nature of this methodology, qualitative description requires that methods are explicitly described and accepted techniques for sampling, data collection and analysis are referenced and relied upon (Sandelowski, 2010).

In terms of the scope and aim of this project, QD is the most relevant methodology, selected for the fittingness of the final product to the question being asked - Mills (2014) asserts that in qualitative research, the chosen methodology should be linked to the outcome of the study. With qualitative description methodology, Sandelowski (2010) affirms that findings of a study are closer to the authentic data, termed “data-near” (p.78), and less transformed than more interpretive methodologies. This research is intended for policy development and further research, the findings must be offered in a usable format, in language accessible to policy-makers and those engaged in emergency management planning.

While methodologies aimed at producing a theory such as grounded theory and phenomenology are more interpretivist and constructivist in their orientation (Vaismoradi et al. 2013; Giacomini, 2010), qualitative description does not aim to produce a theory.

Epistemological viewpoints about the nature of the inquiry should be clearly articulated by any researcher (Vaismoradi et al. 2013). As this study is exploratory in nature, and the underlying epistemological assumption is that the data is more or less accurate truths or realities, an interpretivist oriented methodology would not be appropriate for this study as the product is not purely theoretical and the data is not determined by an overarching theoretical position.

Sandelowski (2010) considers QD to be less interpretive than phenomenological research. Another point to consider is that grounded theory, ethnography and phenomenology are consistent with a constructivist or an interpretivist stance – discussed further in the *Positionality* section below.

### **Positionality**

Lincoln (2010) describes the importance of positionality, marking it as something essential for transparent qualitative research: “detachment and author objectivity are barriers to quality, not insurance of having achieved it”. On reflection of the ontological and epistemological frameworks of this research, it is necessary to define the different viewpoints, and the tension that exists between the conceptualizations of the phenomenon itself within this work and how I am attempting to study it.

Ontology is concerned with what exists or our beliefs about reality (Giacomini, 2012). This is sometimes expressed as understandings as to what constitutes a “fact” as



opposed to a “value”. Giacomini states that facts are defined as ‘what is’, while values are ‘what should be’. For this research, the perspectives, thoughts and ideas of the sample population are captured and presented in a way such that findings may be useable for a specific purpose. The data itself comprised of both facts and values, however even when data is considered fact – rather ‘what is’ – this is expressed through the language of the participant, and will be coloured by their own values when communicating ‘what is’. The expression of ‘facts’ are shaped, to a degree by the individual’s values.

Epistemology is the study of how things come to be known, or how the researcher can come to know the phenomenon, (Giacomini, 2012). Qualitative description as a methodology, falls into the pragmatic, middle ground of the epistemological positions. Pragmatist epistemology is based on the supposition that “phenomena do operate independently of our ideas...but we must apprehend these phenomena through our ideas” (Giacomini, 2012) and conclusions are presented in a useable, accessible and actionable scheme (Thorne, 2008 in Giacomini, 2012). My own philosophical orientation is more on the idealist spectrum towards what is known – that knowledge is constructed by people and social and cultural contexts influence the way concepts, things and knowledge is created. Due to this personal orientation, my understanding of the descriptive research described in this thesis is that it represents a compilation and comparison of others’ facts and values on the topic of inter-organizational collaboration and planning. I take a pragmatic stance to foreground the descriptive element of this work in order to produce findings which are relevant to policy and planning activities, rather than, for example, an interpretive analysis of the ways that participants organize this information into their own

schema of collaboration, or a phenomenological understanding of the participants' "experience of being" (Giacomini 2012) a collaborator or ground actor.

The goal of this research is not to produce a theory, but a compilation of views for policy development and future research.

Within this philosophical orientation, my approach to the research and engagement with the participants and topic is also influenced by my personal experiences and perspectives. As a novice researcher, the methods and topic were new ground for me. My orientation to the research is based on personal interest out of recent experiences within the context of disaster response and planning as part of the response, but also being affected by disaster myself. Due to the feelings I had about government leadership, disaster planning and response, and the potential for my views to either make or miss connections in the data, reflexivity was a useful tool and will be discussed later in this chapter.

### **Study Design**

This is an exploratory qualitative research study which used qualitative description methodology to conduct key informant interviews on the topic of collaborative practices between organizations in the context of disaster planning and response within the health sector. Key informants were those who have had significant experiences in area of disaster and emergency medicine, leadership within the field and made contributions to policy development. They were interviewed about their thoughts and opinions on collaboration, partnerships, and significant issues relevant to the planning within international and local communities.

## **Key Informants**

According to Marshall (1996), the key informant is considered to be an expert source of information who performs key roles in the topic area of interest and can contribute useful, quality data that represent a range of views which they are exposed by virtue of their position within a community. Criteria concerning the ideal informant has been described by Tremblay in Marshall (1996) as those who have certain personal skills or occupy a certain position in society, are considered “natural observers” who possess a breadth of knowledge that they are willing to communicate to the researcher from various perspectives. Key informants can provide rich historical, political, professional overview of the issues relevant to the community and offer solutions to issues (Marshall, 1996), including what has been tried, worked and failed when confronting issues (Patton, 2018).

We chose to use a key informant sampling strategy in order to obtain high quality data from knowledgeable sources rather than sample a large number of participants with limited knowledge or experience. In qualitative inquiry, the expert interview is a common sampling strategy (Patton, 2018). Experts are those with in depth knowledge of the subject of study and if they are willing to share their knowledge with the researcher, termed key informants (Patton, 2018). These people are carefully selected and are considered experts in their particular field. For this study, the key informants had experiences that encompassed multiple events over various points in times, often synthesizing multiple sources of information into a single story. As the context of natural disaster planning is not well studied, the use of key informants could provide a richness of information that might not be captured with the use of an alternate sampling strategy.

While this strategy of selecting key informants is common practice, Wagner and colleagues (2010) and Patton (2018) caution that the credibility and usefulness of the data from key informant interviews depends upon the individual credibility of those selected. Some potential issues that may arise relates to the representativeness of the information shared – it is possible that the experts are not aware of all issues facing an organization due to their position in an organization, or could possibly inflate their own importance – thus impacting the data (Wagner et al. 2010). Issues of self censorship can also limit the depth of data if informants may not be willing to disclose sensitive information or may only present views that are acceptable socially, politically, and/or professionally (Marshall, 1996). Despite potential limitations, the key informant sampling strategy can offer a strength to exploration of collaborative practices in a disaster context - according to Homburg and team (2010), critical events are more easily recalled than routine events, thus even though participants may discuss events from many years ago, they may not be so far removed from memory. They also supported that key informants are useful for gathering data on organizations and the contribution of a greater volume of data will likely come from those occupying higher positions in organizational hierarchy (Homburg et al., 2010; Kumar et al, 1993). In a study about inter-organizational relationships using key informants, Kumar and colleagues (1993) found that this strategy presented challenges when multiple informants were used to collect data regarding particular relationships between firms as disagreement of perspectives increased with more key informants.

## **Recruitment and Sampling**

Recruitment aims were to represent a group of participants with various backgrounds and professional involvement in international disaster response who might share their specialized knowledge. However, I had the opportunity to recruit high level key informants and poured my efforts into representing concentrated sources of information. As such, desired participants were invited based on their ability to contribute rich and detailed insights to the project, offering practical and conceptual knowledge based on their varied ‘insider’ experiences globally and having occupied leadership positions within various organizations.

Participants were located through publicly available information and professional networks. Publicly available sources include organizational websites that list names and contact information for people in specific positions. I had the opportunity to attend the World Association for Disaster and Emergency Medicine in Toronto during the early stages of this research – the conference materials were the primary source for locating potential participants at the beginning of the study. Our research team includes several people who are active in this community, and they circulated our recruitment notice through their professional networks and personal contacts.

All participants were adults. They were selected for their professional roles in relation to disaster medicine and emergency response management. For example, we were interested in speaking with people who acted in various roles within the domains of health care services delivery, human resources, emergency management, provincial operations, government relations, communications, external partnership management and

organization executive. Participants may or may not have a current professional role in this area. For example, they may be retired or have changed careers. If a participant self-identified as having expertise in this area, they were included in our study. For this research, it was important that these key informants be regarded as experts by their peers and by an active member of the community of interest on the research team, and were vetted prior to recruitment. Involvement in the conference also ensured that the participants had attachment to the community.

In contrast to purposive key informant sampling, another strategy might be availability or convenience sampling where sampling is based on ease or accessibility of participants, such as within a local organization or sending out the recruitment notice to all conference attendees. The sampling strategy can also be influenced by time and resources (Daniel, 2012), and selection of a strategy might consider these practical points as well as the research objective. As this project received no financial support, cost was a consideration in determining a practical and fitting sampling strategy. For example, travel, conference fees, interview costs for telephone interviews and technology to collect and store data and time factored into the decision for key informant interviews. Given the rather short period of time for the course of a masters' thesis, it was mutually agreed by the research team to employ purposive sampling.

The inclusion criteria are broad, however several members of the research team were able to use their specialized knowledge of the population to ensure that sampling and recruitment efforts would select informants on the basis of the knowledge they could provide. Daniel (2015) states this is an advantage of purposeful sampling whereby

participants are selected for their fit within the inclusion and exclusion criteria;

*Inclusion Criteria* – Adults, self-identified experience in phases of disaster management (within health sector), leadership and high level roles in disaster & emergency medicine globally, current involvement in disaster & emergency medicine community or previous substantial experience

*Exclusion Criteria* – role outside health sector, absence of field or policy making experience, under 18 years of age, inability to conduct interview in English

We anticipated that most of the participants would have been attendees at the World Association of Disaster and Emergency Medicine World Congress in Toronto, Ontario. E-mails were circulated prior to the conference through professional networks, with many potential participants indicating their interest in the study, most requesting later contact during the conference to schedule an interview time in person. During the conference, scheduling conflicts and the plethora of activities made potential participants otherwise engaged, and unable to commit to a specific interview time during the dates. Many requested contact at a later date following the conference in order to schedule a telephone or Skype interview.

Our objective was to recruit participants until theoretical sufficiency was reached. Sufficiency means the point at which new data will fit into thematic categories established from previously analysed data (Varpio et al., 2017). From past experience, we anticipated that would have occurred between 15-30 participants. This was not possible due to scheduling conflicts, time zone differences, lack of response to requests, lack of availability due to the nature of their professional roles, and prolonged periods out of

contact while involved in humanitarian relief work. Furthermore, during the period of time available for data collection, several large scale disasters occurred throughout the world, which limited availability of key informants.

We did succeed in interviewing six high level key informants who all shared current professional roles in the health sector, all had roles in policy development, academia and research, and training. Five informants had clinical backgrounds. Participants had employment within branches of government, global organizations and humanitarian aid organizations. All participants had experience in international disaster response (health), and represented high income countries. A common feature of all participants was the multiple roles that they held professionally.

These participants were important players in a small global community of people involved in this type of work. During the interviews, it was common to hear participants talk about their response to the same events, overlapping experiences and issues, despite the seemingly diverse backgrounds and broad experiences. Many had experiences that spanned greater than a decade in many countries and in various capacities. Several also contributed to policy development at a global level.

### **Recruitment Challenges and Efforts**

In an effort to recruit high level key informants, we used purposive sampling to approach attendees of the World Association of Disaster and Emergency Medicine conference. Using publically available conference presenter and attendance lists and social media, I generated a list of ideal participants who would represent different



perspectives that I would be interested in speaking with. The list was reviewed with a member of the research team, active in the community and knowledgeable about the potential key informants. Agreed upon names were sent recruitment notices through professional networks. A brief overview of the study was given and potential participants were invited to contact the student investigator by phone or email to learn more about the study. Individuals who expressed interest in participating in the study corresponded with me to arrange for an interview meeting time.

Many potential participants contacted prior to the conference ( $n=30$ ) indicated their willingness to participate in person sometime during the week while in Canada for the conference. To complicate actual data collection, the robust conference program consisted of several different disciplinary tracks, not allowing much time for interviews. Conflicting obligations allowed for only 3 participants to schedule interviews during that week (2 in person, 1 by phone) prior to the conference, the majority of interested parties leaving the invitation open for me to find them during the week and have a ‘sit down’. Following the conference many individuals requested that I follow up with them weeks later or liaise with their assistant via email in order to schedule a time for a phone or Skype interview. I found this practically difficult due to time zone differences, lack of availability, cancellations, re-scheduling, vacations/holiday, and then apparent loss of interest. For example, one interview was re-scheduled 3 times over the course of 5 months before it was conducted.

The other common issue faced was lack of interest following the conference, one potential participant had agreed to an interview, left their respective organization, and

although agreeable for me to contact them again, it did not materialize into an interview. Other participants consented to participate, but did not respond to my attempts to contact.

I also reached out to several people not on the initial list, based on presentations I attended at the WADEM conference or contacts I made during the program. All of the people I contacted as the student researcher did not respond to my emails ( $n=12$ ).

Concerns regarding the inadequacy of data collection, impacting sufficiency of code and thematic saturation, prompted a research ethics board amendment (approved April 10, 2018) in order to creatively attempt to solve the problem of participant recruitment. Although it followed that recruitment efforts could continue and in more encompassing ways, the decision had been made by myself and the research team that data collection would cease and continued efforts would only further delay the completion of the master's thesis, and ultimately graduation.

Despite these challenges, the data obtained has provided rich and thick description, which resonates with the research team and audiences.

## **Research Ethics**

Due to the relatively small nature of the disaster and emergency medicine community, ethical issues relating to confidentiality, privacy and protection of information were identified as crucial to research practices for this project. The potential exists for participants to be identified through direct quotes in the manuscript by the experiences they may discuss relating to a particular international response and their respective professional roles. Careful attention has been paid to removing potentially

identifying information from transcripts, and direct quotes are only used where protection of privacy can be assured. The research protocol was adhered to and highlights practices for storage of data, transcription and maintenance of confidentiality (see Appendix 2.A). Privacy is an important and primary reason for conducting single participant interviews rather than focus groups. This significant feature is explained to participants fully prior to conducting an interview, and copies of the study information sheet and consent are provided to potential participants to help inform their decision (see Appendix 2.B).

The study received ethical approval from the Hamilton Integrated Research Ethics Board on April 6, 2017 (see Appendix 2.C). An amendment was approved on April 10, 2018 (see Appendix 2.D).

The study is very low risk research comparatively speaking – there is no treatment or intervention involved, topics discussed are generally not regarded as sensitive or threatening to participants, so risk of harm is minimal, described generally as the possibility of feeling uncomfortable if an anecdote brings to surface emotional responses. Participation was completely voluntary and there was no incentive offered to participants that would present any issues of coercion to consent to participate in the research.

Key informants were all of a higher social and professional position than the student researcher, thus any imbalance in power was not in favour of the researcher, but rather of the participants, and power differentials potentially affecting autonomy of participants was not identified as an ethical issue.

## **Data Collection**

I conducted semi-structured in-depth one-on-one interviews, which I audio recorded using a handheld voice recorder. All interviews were transcribed verbatim; however, to protect participant privacy, potentially identifying information was changed to ensure linking responses such as names of organizations, specific cities or roles were removed in order to ensure confidentiality of participants. If a name appeared on the transcript interview, it was removed and replaced with a non-identifying placeholder. Personal information was kept separate from the transcripts, and could only be linked through consents stored separately in a locked cabinet in the faculty supervisor's private office at her workplace. The data was aggregated during analysis, and no individual person's comments are identifiable.

Participants were given various options for interview modalities – such as in person, over telephone or Skype - according to participant preference. All interviews lasted 30 - 60 minutes in duration. Topics covered in interviews focused on specific personal experiences of participants in an international or domestic emergency medical response in terms of successes encountered, their insights and opinions on well-prepared collaborative systems, roles of governments and relationships with organizations providing health services, the role of clinicians and how they relate to effective health systems during disaster and complex emergencies. Interview questions were modified in order to capture the insider perspective of the participant, eliciting detailed information that could contribute to a rich understanding of the research question and further explore relevant topics, as they evolved with interview responses.

The interview guide for the initial interviews was developed in consultation with the research team and piloted with three key informants (see Appendix 2.E). The semi structured guide consisted of 12 questions that were asked in the same order, however questions were omitted if previous responses made probes redundant. During these initial interviews ( $n=3$ ), issues surrounding collaboration between governments and non-government organizations or inter-organizational collaboration became prominent topics, and the interview guide was amended to further explore these areas (see Appendix 2.F). Subsequent interviews ( $n=3$ ) evoked thick descriptions of collaborative challenges and successes within the context of disaster and emergency response and planning.

Written informed consent was obtained from each participant. If consent was not obtained in person prior to the interview, the form was emailed to the participant for signature and returned to the student investigator. Before the phone or Skype interview, details of the study were discussed and opportunities were given for the participant to ask questions about the research from the student investigator. The participant confirmed understanding of the form and gave express consent to participate. Electronic consents were printed and original paper consent forms were returned to Dr. Meredith Vanstone's office for secure storage as specified according to the research protocol.

I compiled field notes during interviews – primarily concerned with nuanced participant behaviours I observed, names of events or organizations that would require further investigation or my immediate impressions on the content or delivery of their responses - which were analyzed and assisted in the composition of memos. The field notes were often consulted for linking transcript data and memos during analysis.

The objective was to interview participants until theoretical sufficiency was reached, meaning any new data would fit into categories already identified through interviews (Varpio et al. 2017). Although the methodological texts addressing qualitative description are limited, calculating sample size required at the proposal stage was estimated based on the research team's past experiences.

Given the contextual and individual nature of predicting a necessary sample size for a qualitative research project, estimates made for the purposes of planning and research ethics applications are only estimates. Data sufficiency is typically ascertained as the project progresses, with qualitative researchers using a variety of techniques and concepts to determine when data collection may cease (Guest et al., 2006; Bowen, 2008; O'Reilly & Parker, 2013; Fusch & Ness, 2015). The lack of authoritative guidance within the literature on determining saturation has been problematic as the concept saturation has been utilized as a general term indexing quality of qualitative studies (Bowen, 2008; O'Reilly & Parker, 2013). Despite these inconsistencies in pre-determining sample size and the absence of best practice guidelines on achieving saturation (Bowen, 2008), an estimate was required at the proposal stage (of 15-30). Although difficulty recruiting did not allow for the actual sample size to match the estimated sample size, there are other ways to think about sufficiency and saturation. However, given the requirement to estimate sample size for ethics applications and research proposals, Malterud and colleagues (2016) argue that when it comes to sampling and approximation – “an assessment should be stepwise revisited along the research process and not definitely decided in advance” (p. 1757).

Saturation is an increasingly controversial topic in qualitative research methodological circles. Investigations by Guest et al. (2006), Francis et al. (2010), and Hennink et al. (2017) sought to clarify and quantify the concept of saturation.

In these articles, all authors distinguished between saturation as a concept applicable to the level at which analysis is taking place; *code saturation* (Guest et al. 2006), *construct saturation* (Francis et al. 2010) and *data saturation* (Hennink et al. 2017) were similarly compared, while *theoretical saturation* (Guest et al. 2006), *meaning saturation* (Hennink et al. 2017) and *study-wise saturation* (Francis et al. 2010) were commonly referred more comparatively to the concept of ‘sufficiency’ as I have delineated earlier. Francis et al. (2010) reported that construct saturation occurred at 14 of 37 interviews, study-wise saturation occurred at 17 of 35 interviews. Hennink and colleagues (2017) declared at the first interview, the bulk of the codes had been developed, irrespective of order of initial analysis of transcripts. Guest et al. (2006) determined that at 6 interviews, 94% of high frequency codes were present at 6 interviews, while at 12 interviews 97% of high frequency codes had been identified – that is, during analysis the codebook remained adequately stable after 12 interviews, however “high-level, overarching themes” (Guest et al., 2006, p.78) were identified at 6 interviews, suggestive of sufficiency in “meaning themes and useful interpretations” (p. 78). It is important to note that all three studies commented that the theoretical underpinnings and aim of any study should be connected to the sampling, thus results from their experiments should be cautiously taken as guidance for what a researcher ought to do. It seemed based on the limited literature available that fewer interviews were

needed to generate meaningful analysis and achieve overall saturation *if* the objective was to capture themes, sampling was iterative and the quality of the data obtained could provide substantive material for analysis (commonly referred to as ‘thick’) (see Figure 6 in Hennink et al. 2017). The characteristics described above are more consistent with the methodology and methods of this thesis than other methodologies with a theory development output, thus a smaller sample size would be expected for this project.

While I am unable to claim saturation at 6 participants, I am confident that the findings which have developed from this data can be useful to understand barriers and facilitators of health systems inter-organizational disaster planning for the following reasons. During the planning stage, the sample size estimation of 15 – 30 was reflective of the broader aim of the research, with a focus on obtaining comprehensive information from a diverse group of participants with varying participant characteristics. This aim was narrowed after initial pilot interviews with key informants who provided sufficiently dense quality data, preliminary findings were affirmed with the research team and a knowledgeable audience.

Corresponding to Malterud and colleagues’ (2016) concept of “information power”, the aim of the research was narrowed after initial pilot interviews with key informants, and it became clear that the quality of the data collected was sufficiently dense. According to their model, sample size is conceptualized according to “information power” and estimated relevant to the aim, specificity, use of theory, quality of dialogue (interviews) and kind of analysis employed in the project, however these elements need not all be considered, but rather prioritized. Simply put, the greater the quality of the



information in the sample, the lower the number of participants needed for the study (Malterud et al. 2016). In this way a study's adequacy of sample size is based on the "information power" of the results rather than merely numbers. It has been important learning at the MSc level to consider the underlying foundations of saturation and sufficiency within qualitative research. The quality of the study should be considered by examining process and product quality assurance measures.

### **Data Analysis (Coding Strategy)**

In order to be consistent with the aims of the study – that is to produce a work which may help inform policy development and strategic planning- significant categories and themes are of interest, rather than those that are most commonly occurring. This process of thematic analysis aims to produce themes from the data analysed, emphasizing the context (Vaismorodi et al. 2013), which is different from content analysis in which the data is analysed according to who says what, to whom and with what effect, the aim to conceptually describe the data (Vaismorodi et al. 2013). When themes and categories are repetitive and no new insights are gleaned from the data, data sufficiency is reached; though I could not determine this based on the number of interviews that I conducted. In order to identify what is relevant, corroboration of findings may be accomplished through incorporation of multiple sources of evidence, and follow up with participants where appropriate. A process of data collection, transcription, memo writing, coding, memo writing then analysis was followed for each participant to ensure rich description of findings.

The approach to analysis began with memo writing following transcription of interviews. As I conducted and transcribed the study's six interviews myself, I felt close to the data, and began analysis following the transfer of audio recordings to written format. Following a suggestion by my supervisor, I wrote detailed memos immediately after completing a transcript which noted my thoughts on the dialogue as a whole and questions or ideas that I had about particular participant perspectives. These memos were made by hand in a bound book that I used for memo writing and reflexive journaling throughout the research process. The analysis was inductive, in that codes and themes were developed from the data - no prior codebook had been developed. The initial coding process included both *in vivo* coding (where the participant's actual words are coded), and open coding as described by Charmaz (2006). This open coding instructs the analyst to pay attention to the action described in the data. Charmaz (2006) recommends the use of gerunds (words ending in -ing) as a heuristic to keep the analyst focused on action. My initial coding represented attention to level, process, structure, people, feelings, time and context. Initial coding was done manually on printed transcripts with pens and highlighters, as I prefer tactile processes. I also used MS Word (Microsoft) for initial coding, eventually realizing through trial and error that the printed transcripts did not easily facilitate my supervisor's comments on the coding work I had done. My supervisor encouraged the use of qualitative coding software and provided me a copy of N-Vivo (QSR International, Version 11.4.2). I transferred the coding work I had done to the software for ease of tracking and attempt to make my processes more efficient. To facilitate the transition from initial to focused coding, I developed themes from the initial

codes, wrote memos and notes concerning data and themes, and related the themes to the overall research question.

I presented my preliminary analysis to a knowledgeable audience of qualitative researchers, and again to my supervisory committee, both of which generated fruitful discussions and actionable feedback. To facilitate the transition to the third cycle of theoretical coding, I returned again to a manual mode of coding. I exported the codes from N-Vivo, printed them out, and cut them out for manual re-arrangement. I physically re-arranged the codes and categories, referencing memos and notes and interview field notes throughout the process. As the intention of this research is for policy development and further research, I included analytically significant morsels that participants shared even if the perspective was attributed to a single participant.

Memos and journaling with reflections, questions and thoughts were completed after transcription while immediately immersed in the data, following coding and throughout the work of the project. This practice allowed thought processes to be recorded for future elaboration, development of ideas and dialogue between the student researcher and the research team. For example, if participants discussed shared experiences and significant themes were identified that had not been considered, subsequent interviews proceeded in order to explore these themes.

Some demographic information was collected (e.g. professional role, years of experience in humanitarian setting). In the final report, demographic data is reported by general role, such as clinician, management or logistics. Demographic data such as

country for a specific experience may be linked to a quote, in order to add contextual information. Direct quotes may be described by country or job role.

### **Quality Criteria**

Evaluation of qualitative research in terms of quality and rigour can be accomplished using multiple criteria and approaches, which may vary by philosophical foundation and objective of the research (Majid & Vanstone, 2018). Although there are no accepted criteria for Qualitative Description methodology and as the debate into determining and/or assuring quality in qualitative research continues, I situated my pursuit of quality by employing indicators of quality of *product*, and assuring quality through *process* (Reynolds, et al. 2011). There are many checklists or guidelines for producing high quality qualitative research, and Reynolds et al (2011) describe the common elements. In choosing one to fit my project, I identified that a standardized or checklist approach is not congruent with my understanding of rigour in qualitative research, and I would prefer to use a more holistic assessment of quality. With this in mind, I chose to focus on LoBiondo-Wood and Haber's (2006) principles of credibility, auditability and fittingness in my pursuit of quality.

Credibility is a prevailing feature in assessing quality throughout the literature (Giacomini & Cook, 2000; LoBiondo-Wood & Haber, 2006; Saldana, 2014), which asks whether one can believe the findings of the study. Although something often discussed in relation to research, bias is primarily seen as a threat to the credibility of the research and findings of a project. That view is more consistent with a realist or positivist ontology;

however, it is also relevant to a pragmatist view. While not possible to remove the perspective (or bias) of the researcher from qualitative research, it is important to acknowledge that perspective by making explicit how personal experience and understandings influence research intuitions, analysis and decisions throughout the study (Giacomini & Cook, 2000). This can be accomplished by memo-writing (Charmaz, 2006) throughout the research process, or reflexivity and a keen self-awareness.

Assurances of credibility are made by the acknowledgment of my understanding and personal beliefs related to the research and how they might inform my thinking as a researcher, and explicitly stating how my perspective influenced the research decisions I have made. Throughout the life of the project, I maintained a reflexive journal in order to assist with this process. Clear writing and accurate description of methods, along with appropriate literature and other sources cited to give evidence for procedures help readers judge the credibility of findings.

Auditability is the principle that detailed record keeping and documentation of reasoning can allow outside persons to track processes and audit the trail (LoBiondo-Wood & Haber, 2006), and follow research decisions and processes. While my initial processes may have been more rudimentary (such as coding with a highlighter on printed transcripts), I transferred or switched to more technology based processes (such as NVivo coding software, RefWorks - reference management programs, etc.) which allowed for ease of tracking. Keeping detailed research records, including tracked and version numbers of protocols and study materials, memos, field notes, and data analysis records also ensure quality through adherence to the principle. Readers may judge the auditability

through the description of my procedures and reference to strategies employed throughout the project. Documents are provided in appendices.

Fittingness is the commitment to the authentic reality of the participants, described in a robust and thorough way that stays true to their voice. It is also related to how well the findings may be useful to the reader (LoBiondo-Wood & Haber, 2006), relevant to the research objective. In this regard, an *in vivo* coding strategy (Given, 2014), where a participant's own words are used to label codes, was used during initial coding in order to stay with the essence of what the participant is describing.

During the research process, preliminary findings were shared with the research team and a knowledgeable audience during a presentation of the data analysis and research process. Themes resonated with the researchers experienced in this field as well as with the audience, leading to fruitful discussion and corroboration that analysis was proceeding in a manner that made sense from the data.

## **Reflexivity**

In qualitative research, reflexivity is a useful tool in which the researcher turns the investigative lens towards themselves, gaining an awareness of their assumptions and responses during the research process (Hsiung, 2008) and how their own positions might influence decisions made by the research with respect to design, execution and conclusions (Lichtman, 2014). Lichtman (2014) asserts reflexivity can be personal, epistemological and/or ethical, aiding oneself to see things more clearly, as all phases of the project are impacted by the researcher.

Strategies I undertook throughout the process included memo writing, reflective journaling in a personal notebook, and discussions of personal positions with my supervisor and colleagues. For example, during data collection I was aware of how my inexperience as an interviewer may have failed to probe informants to explore responses further if the topic did not seem to fit with the study and I relied more on the script of the interview guide. Through planning and discourse with my supervisor, I became more comfortable with interviewing and practiced skills that allowed me to capture rich data through dialogue with informants.

My professional role as a health care professional seemingly conferred a level of credibility upon me as a researcher with participants who mostly all shared a clinician background. Although not experienced in the field, the outsider perspective may have created a dynamic between myself and some participants whereby responses were shared as individual perspectives, but also with the conscious or unconscious additional objective of educating me with regards to the topic of interest from a policy and/or local and/or larger global issue point of view. I also found that this common ground helped to build a rapport between myself and participants, in that there was a shared level of understanding of the realities of the clinical world. While very few questions I asked were clinically focussed, participants shared insights often from the perspective of a clinician. I think I was most comfortable in this space, and the follow up questions flowed more readily during the dialogue. In the analysis, the knowledge I have of the health care system was sometimes drawn upon when interpreting their data.

Due to my own personal experience with failed government planning, I found that I paid particular attention to instances where informants had critical views of governments, organizations or discussed broken systems. Journaling facilitated my self-awareness of the influence this perspective may have had on data collection and analysis, which I was able to check and re-check to ensure I was not steering the research in a certain way. Reflective memos were shared with my supervisor prior to the proposal stage and just prior to seeking amendment - she posed questions to further understand my own position and views towards the research. This re-examination was helpful not only in the work I produced, but also for revisiting memos at different points along the work and tracking thought processes from evolution of ideas and reflections on ideas and feelings to detailed writing. Another reflexive technique was contemplative discussion of concepts and themes with peers and mentors during presentation of preliminary analysis. This fruitful discourse offered alternative views of a particular theme, and directed my focus to ambiguities and assumptions surrounding this particular theme.

Coming from a professional perspective as an operating room nurse, I was attuned to the role of organizational and community culture and norms surrounding collaboration, however I was careful not to let my experiences overshadow the data or willfully ignore similarities and differences to my experiences. Reflexivity has been a useful tool to check and re-check how I came to understand the research process and the analysis.



## **Summary**

Using qualitative descriptive methodology, 6 key informants were recruited using purposive sampling. I conducted single participant interviews using a variety of modalities (in person, telephone, Skype), and transcribed all audio recorded interviews myself. The research question asked: What are the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster? The coding strategy was most fitting for the research, findings were crafted after careful scrutiny of source data, emphasizing quality and consistency in processes of the research and its product.

## Chapter 3: Results

### Overview

Key informants for this study were asked to participate based on the knowledge that they could contribute to the project in answering the question of *What do key figures in the international disaster and emergency medicine community see as the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster?* Through a descriptive analysis of the data, we identified 18 key themes which describe the value of inter-organizational collaboration, the current barriers and facilitators to collaboration and suggestions for improving collaboration. We have organized the presentation of this analysis to highlight inter-organizational collaboration within a focus on health in context of a disaster. Beginning with an overview of collaboration, the facilitators and inhibitors of collaboration will follow, and will finally conclude with the recommendations gleaned from participants in order to improve collaboration and disaster planning within the realm of health. This analysis demonstrates the importance of and the challenging nature of collaboration within the context of a disaster and offers suggestions for stakeholders as to how they might strengthen the overall preparedness of the health system through planning activities.

After presenting an orientation to collaboration including the value of inter-organizational collaboration within this context I will describe my findings in two parts, grouped according to overall description. In section one I present the facilitators and

inhibitors to collaboration and in section two I discuss suggestions for improving collaboration in health systems. Themes, sub-categories and categories are developed from the data in each of these parts. Analytically significant insights and recommendations are discussed in the systems improvement measures.

While I relied upon the literature to inform my understanding of key concepts, the definitions of the themes were refined by my understanding of the participants' views and narratives.

### **Key Informants**

6 key informants participated in this study. Table 1 represents in aggregate information about these participants, including years of experience, roles, and current base countries. The number of overall years of experience within the field of disaster and emergency management - health sector for informants was a range of 5-30+ years experience with the average being 15 years.

Countries participants spoke of having experiences in (either planning, policy development or field work) were Switzerland, Canada, Australia, New Zealand, USA, United Kingdom, Italy, Philippines, Bangladesh, Nepal, India, Armenia, Pakistan, Haiti, Honduras, Sri Lanka, Dominican Republic, Uganda, Sierra Leone, Burkina Faso. This list is not exhaustive, but rather represents the countries informants spoke about personally having experiences in during interviews.

Informants had held a variety of leadership roles across various governmental and non-governmental organizations, either currently or throughout their experiences. Most

participants had several current roles within academia, research, training, policy development, planning and clinical practice.

<b>Table 1: Key Informant Demographic Characteristics</b>	
<b>Years Experience</b>	<b>Number of Participants</b>
5-10	2
10-15	2
15-20	
20-25	1
25-30	
30+	1
<b>Roles</b>	<b>Number of Participants*</b>
Leadership	5
Academia	5
Research	5
Training	4
Management	5
Policy Development, Planning	6
Clinical Practice	5
<b>Base (Home) Country (current and/or previous)</b>	
North America	3
Europe	2
Australasia	1

\*individuals all had multiples roles

## **Analysis**

### **Inter-organizational Collaboration/ Importance of Collaboration**

The value of inter-organizational collaboration was seen as having direct and indirect benefits that translated to a strengthened health system in a disaster context.

Collaboration between governments and organizations or individuals representing organizations yielded bi-directional education. This education can lead to process,

structural or operations improvements, the ability to improve health outcomes of communities and or organizations through resource sharing and joint problem solving. It may also increase the capacity of the local or individual organization to deal with future events successfully. For example, skills and knowledge of individuals were also enhanced through collaborative activities between local and international organizations, both groups benefiting from mutual learning. Participants talked about looking to other organizations for informal benchmarking processes,

*we've met a few times with the [NGO] folks here just to compare notes, you know like what is your training and education like compared to ours, how many staff do you have, what's your structure look like, like really just sort of sharing ideas and concepts and things that we've learned. (P1)*

despite differences in geographical distribution of activities. This feature suggests that the knowledge of the other organization's activities was indeed worthwhile in seeking out.

An example of increased capacity resulting from collaboration for training and educational objectives was described by a participant who spoke of an humanitarian mission to a natural disaster where a local team was trained by the international team to use a mobile hospital, increased local capacity and ability to manage their own future response ensued from that collaboration; *“they actually had this complete training of how to use this hospital and all the supplies in it...they have their own ability to [successfully respond] with the hospital and used it in subsequent disasters in [their country]”*. (P4)

Participants all emphasized the importance of the need to recognize that any health system is in place to serve the people and communities, with collaboration as a means to meet those obligations,

*you've got to deliver on what the community needs and that means a lot of collaboration between health and other sectors and also ensuring that all the relevant disciplines within public health, or health in general are working together and have a place and a space to recognize their contribution. (P2)*

### **Silos**

When asked about what they understood to be barriers to effective disaster planning and response, many participants discussed the idea of organizational silos. The description of silos was conceptualized as a component of a health system that exist as a separate and distinct entity with limited connection to related components. Silos encompass a) different groups that perform the same function, overlapping in a disaster scenario – such as with multiple NGOs responding to the same event and providing the same services.

b) independent individual departments that are captured under the umbrella of an organization or system that routinely perform separate functions, but are theoretically expected to function collaboratively in the event of a disaster *"there's too many silos where you have different groups.... with the health services disaster response so there's different groups controlling public health, but they're in different department"* (P1)

c) may be functional silos, or silos of knowledge. Silos of knowledge came through as a theme when participants talked about the need for transparency within the

world of humanitarian aid, as the knowledge gained in field work was often protected in order to preserve the competitive advantage of some organizations.

According to participants, the challenge of silos exists within both humanitarian relief contexts as well as within planning and response systems that exist within a single developed nation. These silos may exist between different levels of government. For instance, *"In North America there's this dichotomy between public health and medicine and it just doesn't make any sense when it comes to emergency preparedness" (P2).*

Broadly speaking, the informants who discussed either explicitly or implicitly organizational silos or silos within a system, they viewed the separate, distinct entities as being problematic - a barrier to cohesive functioning of a health system in a disaster response, leading to inefficiencies and/or creating gaps in planning and service delivery.

Silos are problematic for effective planning and response because connections and linkages are needed for organization and coordination between sectors, departments, and organizations;

*there is no good very well structured link between the [country's] civil protection mechanism and the ministry of health. In fact, our intention at the research centre is to create and to sensitize the importance of creating this connection between the two department[s]. Right now yes they are talking but they are not very well structured (P3)*

Practically speaking, clear boundaries of actual issues faced in a disaster context are not divided as they are within administrative structures, but occur simultaneously and often include matters that are generally considered outside the realm of health, yet still affect the health of populations. *"We tend to focus in health care...so they tend to be very focused on what happens in the hospital...but the reality is that [in] an emergency*

*response you're having to deal with things that have nothing to do with health...you play a role, but it's an integrated role" (P5).*

In order to deal with issues effectively, an integrated approach is often required. When the response is not cohesive or integrated, resources might not be used effectively because organizations do not co-ordinate to ensure comprehensive and non-redundant provision of services: *"there's not one cohesive leader or department or strategy to tie them all together, you end up with some duplication of services and the ability to integrate, which as you know is key in a disaster, right?" (P1).* Suggestions for amelioration include *"a better framework for silos or different departments or areas of the ministry all have a [responsibility] to work together and create a cohesive plan" (P1).* *Being able to understand who's doing what, what group is deploying, what's their role and how do we all function together before it actually happens" (P1).* Forming connections and focusing on ways to ensure the various departments and sectors will function together in emergencies and disasters prior to situations unfolding, is important for successful planning and response;

*I think that there are two pillars for emergency management - one is the work that's done in trauma care mass casualty management and the other one which is really the disease surveillance and response systems and those two in the sense represent the two pillars of our work. Sometimes they create separate systems, which is problematic, but the idea is ultimately that they need to converge. (P2)*

When participants talked about examples of responses or planning work that was successful, connections to others were mentioned as a vital factor - *"but I think the thing in [that particular case] that really made it a good strong health team was that*



*connection with the local health director and with the other NGOs in the field through the health cluster” (P4).*

## SECTION 1: FACILITATORS AND INHIBITORS OF COLLABORATION

### ***It’s People, Relationships***

In spite of this study examining the question at the level of organizations and governments, it is not possible to claim that either could exist without the people that work within them. Individuals and the personal qualities they possess can either strengthen or hinder an organization and the propensity to collaborate. The theme of people and relationships was acknowledged as related to the determination of organization goals, in that it is less about the roles and more about the people that occupy the roles, which determine organizational and governmental priorities, collaboration and decision making. When speaking about leadership changes within an organization, one participant spoke of individuals determining priorities, *“sometimes they change it a little, sometimes they change radically, so if you look at [IGO and the current aims] ...they all change with the individuals at the top of these organizations” (P6).*

In one example, a mayor of a city made a decision to respond to an international disaster, tapping into resources based on personal knowledge of those active in the community and prompting an ad hoc organization of a medical and construction team, *“the mayor of the city.... decided we were going to act, so he went to people who he knew were involved in mission work and disaster response and said ‘what can we do?’” (P5)*

Part of the personal connections and networking also relates to individual interactions, in that it's "*very much about simple human interaction to get good collaboration*" (P6). One participant spoke of a long standing personal and professional relationship with a government partner as a factor in the collaboration between the two organizations. The participant spoke of uncertainty in further collaborations between the organizations when both individuals retired, knowing that their replacements would need to build a new personal connection:

*It's about personal relationships...the senior person that I'm now dealing with in government is my age and I've been working with him since my first response to Armenia, both of us are coming up to retirement, and what will happen after that I don't know but a lot of it has been about the personal relationship that we have built up and as we both progressed in seniority through our respective organizations, our influence to bring the two organizations together have increased correspondingly (P6)*

People and their personal and professional networks were also seen as the facilitators to solving complex patient management problems or resolving scenarios where availability of resources limited capacity or were called upon for their expertise. When participants were asked to comment indirectly on factors that facilitated collaboration by sharing a story about a time when things went well, they most frequently spoke about personal networks and relationships driving planning and action. In one example the connection between two medical professionals from different organizations facilitated a collaborative surgical case to be done while out in the field. The participant suggested that the collaboration would not have been allowed by their respective organizations had it not been for the familiarity of the two professionals and the trust that

existed, *“they had worked together before and there was absolute trust between the two of us and therefore we were able to convince the head of the [NGO] hospital that this was an appropriate course of action” (P6).*

Leadership and the reputation of a government or organization was attributed to individuals within leadership positions, successful systems featured strong, well respected leaders:

*the Philippines system for health emergency management system was a strong well-respected system within the international disaster management arrangements of the country had a leader of that system who was fearsome and awesome... basically run the show...she’s also been there forever and a day. People feared her a little bit but also respected her - very much had a military mindset or military milieu about her (P2)*

While individual personalities and relationships were described as a primary determinant of the effectiveness and collaboration between organizations, the individual human connections were described as important features or the defining feature of success in the work of a medical response. When asked to think of a particular response that went well, one participant spoke of the positive experience in creating a team, *“what went very well was the collaboration with the local personnel and also the international personnel in terms of personal interaction...we created a good team” (P3).* Working closely together, spending time and trusting each other’s competence were all important aspects of successful teams, *“we all worked as a team...we were literally together 24/7...so we worked together, we did what we needed to do” (P5).*

From participants' views on past collaborations, I interpreted that formalized processes would be helpful to facilitate collaboration through organizational learning and management, multi-departmental or joint organization projects and exercises as being rich learning endeavours.

### ***Trust-Control***

Within the data, themes of trust and control were developed through analysis, and featured in all the interviews. Although trust and control were each distinct yet often related themes, such as with examples of control when it comes to governance or jurisdictional boundaries, a nexus between trust and control featured in narratives of particular disaster responses, activities and planning. A pendulum metaphor was used to describe a situation that illustrated this interplay - where trust had not been established or had been broken, controlling mechanisms were put in place.

The balance or tension between trust and control seemed to be an influencing factor in collaboration and communication. For example, in an earlier quote about Haiti, one participant described this connection as a reason for a country delaying a decision to bring in or accept outside resources and aid following a natural disaster - the need of the Haitian government to maintain control was guided by the history of mistrust that existed between the government and non-governmental organizations.

The trust-control relationship was also related to the behaviour of NGOs during experiences that were expected to be collaborative such as large scale humanitarian aid

responses involving multiple agencies, yet were not successful to the interplay between trusting and controlling the course.

Equity or fairness of activities was described as a key ingredient of successful collaborations, with shared roles, decision making and the uninhibited sharing of ideas balanced between organizations, which I interpreted as a balance between trust and control,

*[it] has to be equitable...you know that somebody is doing a hostile takeover masking it as collaboration, but usually it happens more by accident on the part of one, and you need to get at the start a framework that ensures of course that it is collaborative, which is in place,...roles are shared, even when and where people meet, that it's shared between the organizations so as it definitely feels everything is checked (P6)*

### ***Competition***

Prior to starting data collection for this project, I was unaware of segments of common knowledge or familiar conversations made within the community I was intending to study. At the 2016 WADEM Congress I felt a palpable tension between some organizations within the humanitarian aid and disaster and emergency medicine community that I would describe as having a competitive and dysfunctional quality of the many groups or organizations represented at the conference I attended. Although I honed in on this immediately, I was careful to reflect on this sense and keep it in check during data analysis. However, consistent with the issue I had previously identified through my experience, participants discussed the “*competitive humanitarian environment*” (P6) explicitly and implicitly in their narratives. Most notably a rivalry was described in vying

for limited available funding resources - *“there’s so much competition for resources before emergencies you know, trying to raise money, but also in time of emergency”* (P2), which may have led to the activities of an organization’s response that persisted regardless of outcomes, impact or evaluation of quality, explicitly given as an example by one participant.

With little incentive to report data and evaluate activities, the competition between organizations for a crowded market space reinforces that organizations protect their information or knowledge generated through responses as trade secrets, or *“commercially sensitive”* (P6). The apparent lack of transparency or information sharing is linked to competition and an organization’s desire to project a certain public image, often engaging in a response despite usefulness or lack of impact *“it doesn’t mean to say that’s worthless, but it’s limited. It’s very hard to sell to a public [that] has expectations of you doing wonderful things”* (P6). Although transparency is called for by many, informants shared that it has not yet been operationalized within the community.

### ***Public Image***

The media attention that follows a disaster is described in a positive way in that it often brings in donors, *“because we got attention in the media, [a donor] gave quite a bit of money for different aspects of medical mission work”* (P5), and promotes discussion and action to develop or plans in countries where there were previously none, or re-examine existing plans, such as with a disease outbreak or a nuclear disaster *“which created a big push for radiation emergency response plan”* (P1). However, the flipside

and often negative face to spurning action, is that it may be short lived and difficult to pull out (especially when providing care that is higher than the level of care normally available in a given community), driven by donors and inappropriately “*pushed by people wanting to give what they have rather than what is needed*” (P6), and may come with unforeseen consequences, though perhaps well intended. A participant spoke of the Greek refugee crisis, and the resulting aid offered by European medical teams to the people as exacerbating the economic situation faced by the country’s doctors in the area. As foreign professionals arrive to provide medical services at no charge, Greek physicians are faced with further challenges to their livelihood as inability of the government to pay their doctors coupled with arriving aid “*makes the medical situation in Greece even worse*” (P6).

Public perception and public image are connected to humanitarian aid context, but also to an extent within a government’s response to domestic and international disasters.

A widely held view was that the desire of an organization, either governmental or non-governmental, to portray a certain public image was a motivating factor in decision making when it came to health systems activities in a disaster context. Public image was discussed in a way that organizations were actively attempting to exhibit a certain image for the general public, or allowing misinformation or assumptions to persist by either not correcting information or not providing it.

*I’m talking about medical and surgical NGOs...the image they give the public about their activities and what actually happens on the ground, that’s why they don’t share it. So, and it’s the same for many people involved in disasters, like the search and rescue teams... I mean our international search and rescue team gets a great deal of publicity, people think*

*they're wonderful, but the most people they've ever saved in one mission is three. They normally don't save anybody. And that's the same for all international search and rescue teams, which should be shared (P6)*

One participant spoke explicitly of risk communication during an event and balancing the need to share health information with the general public and the potential of the communications causing further panic.

Most participants shared perspectives of public image of an organization being tied to public approval and thus funding through private donations or government resources. For example, participants shared that in the humanitarian sector the ability to secure funding and public donations was directly related to the public image of an organization. A majority of participants viewed that some organizations act according to pressures of funding sources/ donors even though there might not be an actual need for the health services. A related issue in the international humanitarian aid community is that organizations do not publish and share data related to their activities. Although lack of transparency was highlighted as an important issue, several reasons for this were given; such as the preservation of public perception of work being done, protecting business activities from competition to maintain funding, lack of data collection and reporting and that transparency has historically been voluntary rather than required.

### ***Politics***



The sentiment that a government's planning and response to a disaster is often politically motivated was common to all six interviews, with high income countries often cited as examples.

In one instance, a disaster response to an earthquake was linked to political agendas and the goals of the political parties, stemming from the country's orientation towards response and less on preparedness,

*[there] is a huge political factor within emergencies...during our earthquake we saw politicians using the environment, using the community, using the emergency itself to create a propaganda for their own parties, so this is a big problem in [our country]... and I don't know if it's only a [European] problem, but I also think it happen[s] in other countries (P3)*

Political cycles and political parties in power ushered in significant changes in financial structure, priorities and activities of foreign medical aid and also domestic planning.

Several participants viewed preparedness and decision making with respect to domestic and international response to be determined a priority that changes with government. For example, one participant illustrated a past government attempt at the creation of a domestic health response team which “*just disappeared...I think it lost political support*” (P1), only to be recreated years later but in a limited capacity, with leaders currently pushing for an expanded mandate, aligned with the intention of the original team.

Restructuring of offices, departments and funding was also tied to politics as described by a detailed history of the politics and changes that occurred in one participant's country with aid, trade, governments and how those changes affected NGOs

and policy, *“that was a big radical change, but then that gets ruled back as different governments come in” (P6).*

### ***Bureaucracy***

Bureaucracy is a highly rule-based organizational structure with a complex system of rules and often inefficient processes that regulate the activities of an organization which might prioritize paperwork and processes over action. Bureaucratic processes are often outside of the purview of frontline providers and sometimes managers, however they may be aware of them. *“I’m not privy to all of it, cause its sort of amongst all the bureaucrats that deal with this” (P1).* All participants explicitly or implicitly describe bureaucratic processes in their narratives as a source of frustration when dealing with real issues or planning activities.

Jurisdictional issues were highlighted as challenging and limiting the capacity of health services human resources and actual resources within certain developed countries (such as licensure, who is paying for services, overlap of authority), Canada being implicated in several instances – there is a need to look to other countries that have solved these issues from a national and international perspective. Working out who is most responsible and who is able to provide health services were described as issues that should be sorted out in planning stages, not as they happen.

Two participants illustrated overly bureaucratic processes in the current Canadian health system when dealing with crisis situations in First Nations communities,

*they’re within our geographical district, but because it’s federal and it’s on reserve, it’s considered federal and it’s*

*governed by and funded by federal sources in terms of health and so it's a bit of a jurisdictional conundrum, because they're still within our district, so for example with the flooding...that's where those two roads sort of clash because in the planning for it they're now in your district...you don't separate it well you're a federal entity and we're a district entity, and you know the argument gets a little heated there's no separation at that point (P5)*

and disaster planning within the country, "sometimes you get caught in the political circle about when they let you go and not go" (P1)

## SECTION 2: SUGGESTIONS FOR IMPROVING COLLABORATION

### ***A Turning Point***

Key informants all shared a common background of having experience in disaster health response and humanitarian work internationally. The 2010 Haiti earthquake was shared as an event that represented a turning point for some participants. Reflecting on that event, participants shared that overall lack of accountability, transparency and oversight in the international health response to the disaster as a key reason for the inappropriate work done. Organizations and individuals "flooded in" (P6) to provide aid to Haiti, but many were ill prepared, unqualified or inexperienced for the health care delivery required;

*sadly, people who need the most aid are most vulnerable in terms of keeping people out as well. People just flood in, a good example is Haiti... whilst there was some extremely good work done there, there was also some hugely inappropriate response (P6)*

Although the cluster approach to coordination had been developed at that point in time, it is unclear why the structure was not effective during the 2010 earthquake in Haiti

in preventing unqualified health care workers or organizations that did not meet standards. One participant contrasted that experience with their experience years later in 2016, and described that the cluster system was more evident than in 2010, and significant improvements in information sharing from the Minister of Health was discernable at the meetings.

While the capacities and needs of the country were different for these two events, a parallel can be drawn by the existence of silos within an international community that responded to an event within a country and the uncoordinated efforts leading to the repeatedly described failures of the response and recovery.

The events in Haiti (2010) were described as a turning point for the international community, citing the humanitarian response as an exemplar of a failure that changed the course of the landscape and informed current practice and work;

*because of what has happened in Haiti before and so many international organizations coming in inappropriately, and working inappropriately without transparency, I think the Haitian government was trying really hard to keep in control over the situation and I think in that sense, it actually, it formed a pendulum and it swung the other way a little bit, so they wanted control, so that they didn't want...a lot of the assessments think there's not enough capacity in Haiti at that moment and that there was some need for international assistance, but the Haitian government was really putting their brakes on and saying we don't need international assistance, and many organizations were saying the same thing and the government wasn't, so it took some time for the government to start asking for international help (P4)*

Although the events in Haiti were described as a tarnish on the reputation of the international humanitarian aid community and regarded as a lesson learned, other turning

points were also described as having a substantial impact on the understanding, planning and actual health response following a disaster. Examples of these turning points are the development of international standards for foreign medical teams; *“following the work we did with WHO after that and publishing minimum standards guidelines and registration and so on, there was no repeat of that in Nepal. Three teams were sent home from Nepal by the government and WHO because they were not meeting standards” (P6)* helping to prevent unsuitable and harmful work in vulnerable disaster-stricken communities through accepted and expected standards. The United Nation’s (health) cluster approach to coordination within international disaster response, and systems that assessed and publicized needs (within the UN’s Disaster Assessment and Coordination team) *“big change was that we had the UNDAC” (P6)*, and new technologies that have increased capabilities for governments and organizations to communicate, collaborate and plan.

### **Value of Inter-organizational Collaboration**

#### ***Building on the Foundation of Existing Infrastructure***

The theme of ‘the big picture’ was a common thread among participants. Having an orientation to the overall broader system, goals, community or issues was described as a key feature of successful planning and activities.

Organizations should acknowledge and understand they are part of a larger system, government planning in the health sector needs to be broad-minded and consider larger issues that may be classified as being outside of the realm of health. Most

participants discussed the view that in order for the health sector to be successful in a disaster, all parts of the emergency management system should be in working order;

*one of the things is not the countries disaster management system needs to be effective in order for the health sector to be able to plug into that if it's not there, then sort of where does the health sector go? So you could say they go hand-in-hand. And then of course the health sector needs to be an effective partner within that system when you look at the whole disaster in emergency system within a country (P2)*

*"mainly when we talk about [a] disaster, everybody, all the physicians, think yes, emergency medicine and [it's] not only emergency medicine, [that's] only a very small part of the overall picture" (P3)*

*"you have to understand that you're representing an organization, but the organization itself is only part of a much bigger picture" (P4)*

Several informants shed light on the daily functional capacity of the health care system and as a potential barrier to appropriate disaster preparedness,

*but a lot of the foundations that say are of emergency management come from the routine work that are done day today at the emergency management systems are that are effective obviously can deal well with mass casualty incidents. If you can't deal, and in Africa, where there are problems with emergency management systems is because also they can't deal with the smaller scale events neither, so that's also important to understand this continuum (P2)*

*How do we deal with.. if we're at our capacity all the time..what do you do and then disaster situation when you have an influx that's more than what you were expecting? How do you build that capacity..do you change policies to allow people to be in hallway? Because that's obvious...the fill rate is 98% all the time, so knowing that in times of disaster you have to be able to relax some things you're not going to be as stringent with the procedures because you know you don't have time for that (P5)*

### SECTION 3: ENHANCING COLLABORATION

Key informants made several suggestions for improvements when discussing problems related to collaboration and to health systems in general for a disaster context. While silos, competition, public image, bureaucracy and politics can be seen as barriers to collaboration and thus effective planning, specific activities for improvement were also shared. The suggestions are presented according to each overall category heading and discussed in the body of the text. They are also presented in list format in Table 2 (Appendix).

#### **Category 1 - Necessary Aspects of Planning**

Most participants shared that cohesive disaster planning is needed at national and local levels, this feature was recognized by frontline operations - yet the message is failing to gain traction or generate real results in the example of an organization's desire for an expanded mandate at a federal level in Canada - *"so I think there's just a lack of federal leadership on a cohesive disaster plan for the country, and so we're sort of left pushing but having difficulties seeing any movement on it" (P1)*. Cohesive planning would also include attending to regional vulnerabilities, in that specialized planning is needed for rural or underserviced areas. Participants shared that resources are often concentrated in urban areas, and not always proportional to risk *"but we know that normally disaster[s] happen where there is some vulnerability" (P3)*. One participant illustrated this point of placement of resources disproportionate to risk within a region or

organization, suggesting that there is a need for intervention in recognition and resolution to the gap;

*he's the only disaster health coordinator in [his region], he's doing a good job admittedly, but the resource allocation in the southern part of the state where the risk is really much lower is five times greater than what it is up there...someone needs to say hey wait a second, and similarly in [our international organization] we don't have the resources where they're most needed (P2)*

This is important for planning, as in a disaster the existing health system resources are often relied upon until outside assistance is brought in. In addition to the risk of a certain region, the vulnerability of a local system can be magnified by inadequate preparation and planning, which has been described as variable in different parts of a country.

Financial incentives are needed to ensure planning is complete, as often variability exists in the preparedness of individual hospitals and local systems,

*there's no impetus for them to plan for disaster response because it doesn't happen very often, it's not forefront on their mind and they have very slim budgets. And so unless there's some sort of stick or a carrot, and usually that's financial, you won't motivate the health services to actually move forward and plan for a disaster (P1)*

Moving towards a cohesive plan, formalized planning processes should involve and engage clinicians and health care personnel in the development of disaster plans, not solely relied upon to provide services when needed. A participant elaborated on the required shift from a common approach of including only those who are involved in emergency services to including all disciplines,

*we should involve all expertise, all specializations not only the emergency department, the emergency physicians, but from the*



*family doctor to pediatricians, to nephrologists to cardiologists, psychiatrists, so all doctors all nurses, all health workers, have to be involved in the process and there is a huge gap in this specific understanding (P3)*

Collaboration with those who possess various expertise can add a different perspective to the planning;

*they had released the guidelines and we were asked to comment...so we had a meeting...I think that was good in terms of you know maybe we're seeing things that they hadn't thought of because we're doing things that they're not dealing with directly, that also helps the partnership, that communication and expectation (P5)*

An example of what formal processes might look like; working through logistical issues before they happen, “*so I think it's helpful when you can straighten out those issues before something happens*” (P5), and explicitly structuring opportunities for communication and information sharing,

*they have coordination systems in place, they can bring resources from one part of the country to another because they have a common system. A case in point would be that every year or two they have a national conference, so all the regions of the country come together for a conference... it's an opportunity for the central government to share the latest policies...everyone felt like they were on the same team (P2)*

Removing bureaucratic barriers to health services delivery was discussed as important for operations in a disaster in that sometimes requirements and expectations for health care provider qualifications and licensure can be a barrier to mobility in disaster contexts at state levels, “*they've created a national infrastructure to deal with*

*licensure...and don't have to deal with all the bureaucratic stuff that we're dealing with"*

*(P1)*

### **Category 2 – Activities to enhance inter-organizational collaboration**

Previously mentioned in the above section related to planning, collaboration was consistently viewed as positive for the overall health system. Participants viewed that preparedness is everyone's business - community involvement, health care provider involvement, and local level planning is crucial for planning and had an inclusive orientation to this work.

Physical meetings and face to face interactions were described by all participants as helpful to collaboration and forming connections, or at the very least getting to know people who would be called upon in a real situation,

*we ran through the scenario where we physically went downtown and met with all the partners that would have been part of a disaster response, and so in that way, we actually get to know who's in charge of these things (P5)*

Planning joint exercises were viewed as related to working together *"we've done a few multi-departmental exercises in [our region], but not enough really for all of us to be comfortable with what the other one's gonna do" (P1)* and becoming more familiar with each other's roles and responsibilities, yet often enough to ensure that there is confidence in that understanding.

Participants shared a view that there is a need for governments and organizations to invest in collaboration – for example, offering joint project funding, *"we use that to put in for joint funding for projects, and that's been extremely successful" (P6)*, providing

financial incentives for collaboration, and devoting time and space for collaborative work;

*carving out some space, not much space, but certainly having a dedicated unit at each level of the system that can help facilitate this collaboration amongst the different players and importantly for them they represent the health sector in the multi-sectorial environment as well. It's a small investment, but it goes a long way and will make all the difference (P2)*

Although the overall system is considered, successful collaboration on a small level relates to the larger level,

*if you get it right at the small level, it will be okay at the big level.... we've had differences of opinion with partners.... with people can do that without falling out or getting too heated is to share things and you're not going into the meeting thinking 'oh I'm going to get rolled over by whatever they say'. You've got to get it right at the small level, you don't stand much chance of getting it right at the big level unless you can manage that. (P6)*

Openness to sharing differences of opinions, and capacities facilitates the success of partnerships; *"knowing the limits of these groups, these partners' capacities is really important because a lot of time you can't mandate, you have to work collaboratively"* (P5)

### **Category 3 – Knowledge sharing for health**

Knowledge sharing was a recurrent message within and across informant interviews and might involve formal activities such as dissemination of information, meetings that allow for opportunities to get information, ask questions and learn processes, and the collaborative development of published policy or guideline documents. These activities might be conducted for the specific purpose of knowledge sharing and

education, or may be a beneficial outcome of coordination or policy development activities. Knowledge sharing through training exercises might increase the individual health care provider's confidence in their own skills, in the system which can improve performance and decrease confusion in a disaster scenario.

Participants related activities that I interpreted as 'knowledge sharing' to more efficient processes, optimization of outcomes and resources, overall success of planning and accountability.

The emphasis on actual and the "*appearance of*" (P6) transparency of activities to increase accountability was called for several participants, however it was recognized that in order to maintain transparency, meaningful data collection is needed for health service delivery activities and outcomes in disaster contexts,

*I just think people should first of all create the data, and then share it, but one of the reasons that data's not being shared so much is because it might not actually be there. They're not actually collecting meaningful data. (P6)*

While it may be a reality that the data doesn't exist, a few participants shared that knowing where to locate trustworthy information is a challenge, as confusion exists about how and where to access information, and how it is being managed. Accessible, evidence informed quality tools for clinical decision making in the field including regional specific clinical information and "*knowledge of populations and disease burden*" (P4) was an insight for preparing clinicians to work in the field internationally. Evidence to inform policy is also needed, including reviews related to disaster context, though it was shared that this was an area being developed currently.

Several participants spoke of an often untapped resource in those international NGOs with expertise and knowledge planning for and responding to disasters, and although often in a different context, would be useful for planning domestic activities, *"there's lots and lots of factors with international aid that you can actually take back to a different country"* (P4).

#### **Category 4 – Decision making priorities**

Consistent with the themes identified earlier, decision making and *"skewing of priorities"* (P2) can often be linked to factors such as funding, public pressure or political factors, rather than the actual health needs of the people, *"the system needs to be in place to deal with the realities on the ground and not the sort of warped by the, I guess I don't know what the right word is, biases or whatever or funding sources."* (P2) I interpreted dealing with competing priorities or accountabilities as a balancing act especially within humanitarian aid;

*I think it's important for the general public to realize is that sometimes sending a team or certain supplies, although it looks good and it makes good media stories, it might not be the smartest thing to do but that's a struggle that organizations have sometimes because they're getting pressure from the public to do something and they know probably that its not the best or the most needed, but they do it anyway because of public pressure (P4)*

Changing governmental priorities were mentioned also as a factor in decision making, with politics impacting policy and funding; *"well anything with government departments, that's politics and it depends on the flavour of the government"* (P6).

Within the context of a disaster, uncertainty and incomplete information adds complexity to decision making. However, throughout the interviews, participants often expressed timeliness in making a decision as critical to outcomes,

*I remember being in health sector meetings in [my province] when the group was taking about how to plan for the incoming Syrians... and there were a lot of big organizations and very competent people who were really grappling with the idea of how do we make a decision without the information, how do we make a decision with this information we might not know and I think it was interesting to me that this was a barrier, they couldn't make because they said we don't have it, we don't know, we don't know, but so they weren't making any decisions (P4)*

Successful decision making would use a systematic approach, based in evidence that accounts for the broader view and understands the essence of the issue, always with the objective of meeting the health needs of the population they are serving.

#### **Category 5 – Attending to educational requirements for health care personnel**

Participants all shared experiences with a training and educational focus in disaster planning or response. Some shared formal learning experiences, and some shared informal learning experiences, yet all felt education was important for this work. While there is some bridge between the international and domestic setting, flexibility and adaptability were discussed as needed for the international context (in a low resource setting).

Examples of activities that attend to educational needs of health care personnel might include adaptation training – working in a disaster context requires doing daily work in abnormal circumstances with limited resources. Moving from a context with

abundance of resources to scarcity of resources presents difficulty in practice, including clinical decision making, *"if they've only worked in a high resource setting it's very difficult to working in a low resource setting when they're not used to that, because in high resource settings, there's lots of extra people around, and we can do testing, bloodwork or whatever to make our jobs in terms of diagnosing easier"* (P4). Working in these environments present real ethical challenges, and managing ethical dilemmas should be approached prior to an actual disaster, with supports available during an event. Clinicians should be prepared for working more independently, outside comfort level – health services delivery in a disaster context can be a different structure than clinicians in high resource countries are accustomed to, with less availability of resources.

The individual perception of preparedness is important for health services delivery, and linked with competence and having confidence in the people working together, strategies to enhance feeling prepared might include simulation training, scenarios, exercises.

#### **Category 6 – Clearly articulated health system governance structure**

Structure and authority (to make decisions) was discussed as vital to efficient and effective performance during a disaster, including a clear chain of command needed for quick activation, *" disasters are local in terms of initial response, but you need to understand the chain of where to get help, and it seemed to flow well. We identified quickly, we were authorized quickly to launch, which is a key thing as well"* (P1)

Clear decision making authority and processes that are laid out and understood by clinicians facilitate coordination in a disaster context. This contextual difference might clash with the autonomy of decision making characteristic of the clinical reality of physicians in routine and usual circumstances,

*where that command centre is helpful, and counterintuitive than what physicians are most used to for example, and health in general, we feel like we have to be in control, we have to make decisions, doing this and that. The hardest part of having a command centre is that you're one person reporting, and so your job is not to make the ultimate decision, but to know when and how to communicate, to not add to the problem. So that might be wait until you're told to do something, not everyone needs to be making decisions all the time (P5)*

While some participants described explicitly and implicitly governance structures and approaches to management within an ideal system, their views differed. One participant shared that a top-down approach similar to military or command and control systems would be most successful in their domestic system, others viewed a combination of the top-down and bottom-up approach would be best, and some spoke of certain aspects of successful systems without specifying a particular structure.

### **Category 7 – Enhanced communication strategies**

Communication is a pillar of good emergency management, and the topic of communication was consistent to all interviews. Participants were asked directly about what good communication looks like. Strategies to improve communications are based on analysis of participants' views of problematic communication, situations that described effective communication and particular stories illustrating either of these points.



Examples of strategies that enhanced communication in planning activities during a disaster and/or for collaborative work might include: important information should follow an established process, be easy to share (requiring technologies to support the distributed nature of the communications), use an accepted common language that eliminates jargon. Jargon complicates understanding and creates a barrier to engagement, segregating aspects that should be integrated.

*I think one of the key things is also that we need to find ways by which the entire health system gets involved in emergency management and not create - you know by using too many terms like emergency preparedness, from my point of view that's jargon, which is well known to the emergency community, but it's potentially a barrier to engagement, it starts to specialize the area of the emergency management when our key message is essentially that it's everyone's business (P2)*

### **Category 8 – Formalized processes and policy work to strengthen system**

Earlier, I outlined that participants shared the importance of individuals, personal relationships, and networks being a large part of the realities of inter-organizational collaboration and planning, which could change with changes in people. Formalized processes were suggested to enhance decision making, communication, collaboration, coordination and the overall health services delivery during a disaster, which might include policies, frameworks, memorandums of understanding to ensure continuity of core values as individuals change roles,

*[the] national emergency medical team is a collaboration between the government department for international development, national fire and rescue service, and another NGO with secondary partners in the department of health. That's a collaboration and we've got that formulated in a*

*memorandum of agreement between all those agencies, so you can never guarantee these things but you can make sure, as best as you can that there's a framework, so it's people coming in to replace you inherit that framework. And they would have to go some way to try to dismantle it because it would be taking down something now that has been well established*  
(P6)

The use of standards, guidelines and protocols enhance decision making, aide successes and can prevent inappropriate activities.

As systems are often based on the ideal or imagined scenario, they require formal testing to identify gaps and vulnerabilities, *"so you can end up with lots of people ticking the box about well we have these beautiful systems but they basically look good on paper. If there isn't the capacity with the logistics or haven't been tested...you have false confidence"* (P2). Policies might be created or existing policies might be re-examined that ensure this work is actually done.

## **Summary**

In this research, key informants shared a wealth of knowledge, gained through various experiences and lessons learned over their careers. The advantage of having multiple roles over time allowed them to consider different angles when looking at the same issue or reflecting on experiences from informed points of view. Informants often pointed out when they didn't know something, or were speculating, rather than purporting to have all the answers. Across all interviews, I identified the notion of a divide or gap between the real and ideal of health systems in the context of a disaster.

Informants shared perspectives on contributing factors to the gap through their accounts and offered suggestions for closing the gap, and systems improvements.

It was interesting to delineate the rift between the reality and the ideal – after careful scrutiny of the analysis, I see the gap characterized as either a judgement of what is (the real) and what should be (the ideal), or observations of knowledge and practice either being grounded in reality or grounded in theory, which were often robustly different.

Descriptions of mismatches between “*the realities on the ground*” (P2) and the plans for providing health services in a disaster were common in both a humanitarian aid context and a domestic perspective from high resource countries and health systems. Systems that function well when needed were contrasted with “*systems that look good on paper*” (P2) (but do not perform well in a disaster, and unfortunately instill false confidence in the system). In the real descriptions, features of competition, politics and government were considered problematic, versus the ideal where preparedness was given appropriate funding and prioritization across all regions, all facets of health systems were represented in the planning, collaborative work was encouraged and the system would meet the needs of the people it was designed to serve.

There are many resulting descriptions from the analysis that seem intuitive, common-sense, practical and/or widely published - informants' narratives illustrated these tidbits of knowledge through their experiences and expertise. It is perhaps then reassuring or not (depending on how you look at it) that common sense information is being shared when getting to the essence of health systems inter-organizational collaboration and

planning for natural disasters. I will discuss implications of these results in the next chapter.

## Chapter 4: Discussion

### Summary/ Overview

In this study, the aim was to describe the processes by which governmental and non-governmental organizations plan to collaborate in the event of a natural disaster in order to improve health systems collaboration and disaster planning. Using qualitative descriptive methodology, key informants who had involvement in disaster medicine and emergency response management internationally were interviewed to explore their insights related to the study question *What are the essential elements of effective governmental and non-governmental planning for emergency medical response after a natural disaster?* From the interview transcripts, data was analysed descriptively and interpretively and the resulting eighteen key themes were developed, nested under four overarching categories. In the Results, the importance of collaboration was presented, followed by barriers and facilitators of inter-organizational collaboration, and lastly, suggestions for improving collaboration were presented (*Table 2, Appendix 3A, p.110-112*).

Although all resultant themes could warrant discussion, I will connect a few select findings to the literature and offer relevant personal experiences as reflections. Beginning with The Case of Haiti, I will follow with a discussion of People and Relationships, Trust and conclude with Implications for Education. Finally, I will present the strengths and limitations of this study, and offer ideas for further research.

### **The Case of Haiti**

The 2010 earthquake in Haiti was a specific example of multiple failings within the international medical response to the event in the study findings. While the country's healthcare infrastructure was lacking prior to the earthquake (Gerdin et al. 2013), the magnitude of the earthquake and resulting health needs of the estimated 300,000 injured persons elicited unprecedented international foreign medical response, which several have described as “uncoordinated” (Gerdin et al. 2013; VanHoving et al. 2010). Consistent with published accounts and critiques of the response in Haiti, participants echoed sentiments that “*extremely good work*” (P6) was done there, yet most also described the prevalence of “inappropriate” activities. Lack of transparency, accountability, undocumented activities of foreign field hospitals were examples of such inappropriate work according to Gerdin and colleagues (2010); their findings were further reinforced by the startlingly low survey response rate to their 2010 study of the activities of the foreign medical teams that arrived in Haiti. 9 months after the earthquake, Haiti experienced a cholera outbreak which has been attributed to human introduction into the country (Walton & Ivers, 2011; Tappero & Tauxe, 2011). Some posit that cholera was introduced by UN peacekeepers attending from Nepal, but the source of the outbreak continues to be a contentious matter. Politics and public image remain large issues both in the accountability for such failures and also the motivation for some response to disasters, with Haiti being rife for “disaster tourism” (VanHoving et al. 2010).

Politics and public image was a key finding in stories shared, whether as an influence on organizational collaboration, a factor directing or hindering the activities and planning of health systems for disasters, or a perceived motivation for actions and/or decisions. The element of portraying a certain public image during time of disaster resonated with my experience following the evacuation of my city due to a wildfire. A tent hospital was deployed to our city as the community hospital was damaged from the fire, however given the resources available including medical technology and the mobile diagnostic units, the highly publicized field hospital seemed less practical than more sturdy structures and gave the impression that publicity was prioritized in some decision making. The wildfire itself became a politically charged event, a factor crystallized in the resulting media coverage.

There also seemed no shortage of visiting specialists immediately after the field hospital was set up – a contrast to the usual challenges of recruitment in rural and remote Alberta. While all professionals were highly qualified and skilled and credentialing was not an issue (as it was in Haiti), the motivation of one particular medical professional dubbed “the tourist” by some of our local staff embodied what was described by VanHoving and colleagues (2010) as disaster tourism, guided by picture taking, bragging rites and lack of sensitivity - astoundingly tone deaf to the community.

While medical tourism was not a notable theme of this research, when reviewing the literature concerning Haiti to expand on what was referred to as “inappropriate”, described in the interviews, I drew on similarities from my own experiences to this concept. I am not commenting on medical tourism in a general sense, as the particular

circumstances of each natural disaster could contribute to the occurrence of such a phenomenon.

### **People and Relationships**

A significant finding of this project was that individuals, personal relationships and personal qualities related to organizational goals and activities, collaboration and decision making. Personal connections and networking were often about the people themselves, rather than the professional or organizational roles. Participants shared that people were at the heart of the collaborative experiences deemed successful, though often the success stories had positive outcomes for patients or achieved planned goals as well.

Linking this theme to my personal experience, it was the people and the relationships of the team during my work at the tent hospital and hospital recovery efforts that were triumphs of my story and the most satisfying experiences of my career. Collaboration within our team and with other teams for problem solving occurred organically, though still goal-directed, with the usual hierarchal structures that remain present in healthcare (despite the push towards team based health care) replaced by a more horizontal leadership structure within our group. An often encountered sentiment of ‘that’s not my job’ in a routine context was replaced with ‘how can I help’ - professionals could often be found working outside of what would be considered their normal role. Daily meals with the team at a local fire hall was a highlight of the day and a chance to interact with other groups present in the area such as firefighters, police, first responders, mental health professionals from outside the province and charity organizations who



flooded in to assist. Similar to a participant's sentiment that teams for humanitarian relief spent so much time together when working and also for meals or socially, group cohesion and trust were enhanced by these elements.

Although my own experiences can be drawn upon to assist in making some of the results of this study relevant, the particular circumstances of any natural disaster could contribute to the occurrence of medical tourism or the humanitarian assistance motivated by genuine concern for human welfare.

A question that comes to mind when thinking about the results is that if bureaucracy and silos are generally viewed as impeding results and people are often the success factor, how can the balance between formal processes and personal relationships be optimized in order to strengthen a health system's response to a disaster?

In a study by Diefenbach & Sillince (2011), all organizational types bureaucratic, professional, network, democratic, hybrid were described as having some form of hierarchy. They stated that formal hierarchy consists of clearly defined official roles and positions, an explicit vertical structure of interactions which is present in all types of organizations. Informal hierarchy unfolds from the interactions and structure of the social relationships in the organization which persist through social processes. Although recent efforts to flatten structures and adopt a shared leadership approach within interprofessional care (Lingard et al. 2012), having the team replace bureaucratic organizational forms, Diefenbach & Sillince (2011) state there is a reciprocal relationship between formal and informal hierarchy. When one decreases, the other increases. Although they found network organization was the most promising organizational type

insofar as having a softened formal order, any organizational type free from some form of hierarchy would be “disastrous”.

## **Trust**

Planning for and responding to a disaster is a high stakes undertaking with real and significant consequences. Unsurprisingly, trust was explicitly and implicitly shared as a necessary feature of this work by all participants in the study. Trust is the willingness of a party to be vulnerable to another with the expectation of positive intentions and adherence to acceptable values without the ability to control the behaviour of the other party (Vlaar et al. 2007). Trust may result in direct benefits such as positive attitudes, cooperation, increased team performance, and also provides the conditions for desirable outcomes (Dirks & Ferrin, 2001). Consistent with the literature, trust and distrust had lasting effects on future collaborative relationships (Oppen et al. 2005; Vlaar et al. 2007; Babiak & Thibault, 2009) and were common across the individual, team, community, organizational and governmental level. One participant spoke of “*lots of clouds, little rain*” (P2) meaning empty promises, with the often enduring negative impact that not delivering on promises had on overall community trust in the health system and the ability of frontline providers to do their job effectively.

Based on this finding, disaster planning efforts within health systems should be inclusive, transparent and pragmatic, attending to establishing and maintaining trust through activities, and relationship management.

### **Relevance for Education**

Implications for education can be discussed at multiple levels: individual, team or group, organizational, network or system level.

Much of the recent health professions educational research focusing on disaster preparedness is concerned with the individual provider, exploring attitudes and beliefs (Kaiser et al, 2009; Atack et al. 2009) feelings of preparedness (Baack et al. 2013), and knowledge and skills that can be used to develop competencies for educational programs (Walsh et al. 2012). Training interventions or curriculum development are formal learning activities proposed by several authors (Walsh et al. 2012) as solutions to the problem of inadequate preparedness, yet Williams and colleagues (2008) point out in their review of the literature that the evidence is inconclusive as to effectiveness of training interventions.

Key informants conveyed the need for training prior to a disaster event, with team educational activities such as group exercises and simulations as being most helpful in increasing confidence in group functioning and understanding the activities required of their role. I understood this to be more a feature of team performance rather than individual competence. Commonalities between the literature and study findings were elements of health professional preparedness related to knowledge of health issues specific to the local area, the ability to adapt delivery of care in limited resources settings or available technology, and decision making based on incomplete information. While many of these things were associated with international medical aid following a disaster, participants identified these challenges as relevant to domestic situations also.

With respect to the previous local event and challenges faced when preparing the tent hospital and the hospital evacuation during the fire, colleagues relayed stories of “thinking outside the box” and being adaptable to unusual circumstances as key. Many months after the return to normal hospital functioning, a specialist reflected on the overall dependence on availability of resources and technology in Canada, while another colleague who had experience working in a humanitarian aid capacity overseas shared knowledge regarding practices for delivering medical care that did not require the use of specialized equipment and technology/ suitable for resource limited settings. These causal and informal learning opportunities demonstrate the way in which valuable information is exchanged on a day to day basis, and coinciding with Burstein’s 2006 editorial, recognizing and utilizing local expertise is important for training relevant to local conditions and practicing realistically.

### **Organizational Learning**

Organizational learning refers to creating, retaining, and transferring knowledge between individuals and the organization as a function of experience. According to March (1991), knowledge is formally stored in procedures, rules, forms and codes within an organization. Mutual learning by individuals and the organization occurs in a social context, with the organizational code, beliefs and language imparted on individuals through socialization, however at the same time adapting to individual beliefs. Organizational learning occurs more often in situations of external pressures such as multiple organizations competing for scarce resources, where the resulting increased

knowledge makes performance more reliable (March 1991). Inter-organizational collaborations present a reward in the mutual learning that occurs, but can also be risky, as shared by one participant, as the exposure of weaknesses comes with greater familiarity. The potential for individual, team and organizational learning through explicit planning activities and joint exercises, as was shared by several participants, were generally viewed as positive and beneficial endeavours.

### **Network Connections and Communities of Practice for Knowledge**

#### **Translation**

Linked to the idea that personal relationships and connections bring organizations together or solve problems, network connections can lead to organizational learning and innovation (Provan et al. 2007). The social interactions, trust and connectedness are common to networks, whether formally or informally established. However, Provan and colleagues assert that those emerging from prior relationships are more likely to endure than rule based, or formally governed networks. Informal networks enable impactful collaboration and learning, being useful sources of information (Abrams et al. 2003). Akin to professional networks, “communities of practice” can be categorized as a new organizational form in the business world (Wenger & Snyder 2000) and increasingly popular in education (Li et al. 2009) when people doing similar types of work can learn from each other through creativity, problem solving, and shared resources and knowledge (Abrams et al. 2003; Li et al. 2009). Wenger & Snyder (2010) point out that these voluntary informal groups are bound together by shared expertise and goals or interests,

resisting any interference of formal processes, instead being organic and spontaneous in nature (Wenger & Snyder, 2000; Li et al. 2009). In order to study and to assess the value of a community of practice, Wenger & Snyder (2000) say that one must listen to anecdotes and stories for understanding.

While at the WADEM conference, some of the interest groups or panels and connections could be likened to a community of practice - internationally distributed in nature with no boundaries save for the shared interests in disaster and emergency medicine or particular subspecialties or disciplines. It was in these groups that knowledge and ideas were shared and conversations were happening. Local issues or a novel approach to a common problem were discussed. Although perhaps not entirely analogous to a community of practice, I see this type of organization a possible solution to the problematic nature of silos - a theme that resonated with audiences and the committee.

### **Strengths and Limitations**

In Chapter 2 (Methodology and Methods) the concepts of saturation and information power were introduced and briefly discussed in relation to small sample size for this particular project. Although I have discussed this in great detail previously, I want to again acknowledge that this is a perceived limitation of the project.

Another limitation of this study is the ability to make inferences from the unit of analysis (individual interviews) to the organizational level. Making inferences from personal experiences to organizational levels is an inherently complex and always

challenging endeavour. When investigating inter-organizational collaboration and how this activity relates to activities within the overall health system such as in planning for and responding to disaster, the generalizability of the findings may be limited by the socio-political context of the events described in participants' narratives, as humanitarian work is most often situated in regions with disrupted political systems and absence of disaster planning (Gallardo et al. 2015). Although disasters most commonly occur in low and middle income countries (LMIC) (Gallardo et al, 2015), the key informants' backgrounds predominantly represented high income countries. Based on that difference, the representativeness of the sample may be confined by this demographic factor; eliciting perspectives from informants who come from these regions might have offered diverging views of barriers and facilitators to collaboration. Despite this challenge, the underlying assumption of this thesis was that lessons learned through international humanitarian aid and disaster response could be applicable to the domestic context of a high income country such as Canada.

The multitude of contextual factors within and between organizations (Moshtari et al. 2016) influence collaboration in many ways and the non-routine nature of disasters adds a layer of uncertainty and complexity to drawing abstract conclusions and overall understanding of this topic area. Drawing on literature from the related disciplines of business, management, health and education, the known principles can be compared and contrasted with the reality of the themes developed from participant perspectives. While this research was descriptive in nature and the results do not attempt to reconcile problems identified, future research can further explore the resulting themes.

## **Next Steps and Future Research**

Although I feel the results provided a sufficiently rich description of many of the barriers and facilitators to collaboration within health systems in a disaster context, future research should include strategies to addressing gaps in planning and service delivery, knowledge networks for disaster planning, how bureaucratic barriers impede health services delivery in a disaster, and attempting to resolve the tension between the real ideal in terms of policy, planning and performance.

From issues I became aware of through this project and the available literature, I feel that further studies are needed in order to understand competition amongst humanitarian aid organizations. Research into this topic area might help alleviate some of associated problems with competition highlighted in this study, however undertaking study within the context of humanitarian aid or disasters is recognizably challenging, there is an added layer of complexity due to the uncertainty of when and where an event will occur, logistical challenges, and the ethical issues that must be considered and navigated when dealing with especially vulnerable populations.

An interesting observation from the work of this project is that within the published literature there are calls for increased professionalism (Gallardo et al 2015), accountability, data collection and reporting (Zoraster 2010; Gerdin et al. 2010) and adherence to standards within the international humanitarian aid community (Gallardo et al. 2015). The global health cluster was established in 2005 as a means to address gaps and “make the international humanitarian community better organized and more accountable and professional” (WHO website, n.d.). Despite the existence of the health



cluster, one participant acknowledged that many NGOs did not attend meetings or were perhaps even aware of meetings within the field. In Haiti (2010) the international response was poorly coordinated (Devi 2010), and demonstrated many failures discussed earlier in this chapter. Evidently the mechanism meant to prevent this type of failure did not succeed in doing so. In 2013, the World Health Organization's Global Health Cluster published the document *Classification and Minimum Standards for Foreign Medical Teams in Sudden Onset Disasters* to improve "quality and standardization of surgical trauma care" (Global Health Cluster, 2013, p.11). While the development of the document is a collaborative venture between authors representing their respective organizations, and represents much needed guidance for ensuring quality of care for vulnerable populations affected by disaster, there was still the sense from several participants that much work is needed in terms of overall accountability, transparency of activities and documentation within humanitarian aid in the health sector. An analogy was used by a participant that the international humanitarian community needs to hold hands and jump together in order for real gains to be made, however the collective action imagined has not been realized. Moving forward seemingly requires some degree of collaboration.

### **Reflections on the Process**

In terms of my own lessons learned from this research and what I would do differently; (1) I would address recruitment challenges by ideally having a research assistant which would enable scheduling multiple interviews during the conference times,

or at other times when I was unavailable, although not possible in an unfunded Masters project. Perhaps increased availability of a researcher could facilitate increased recruitment, as I outlined schedule conflicts as a primary reason for small sample size. However, it was also very important in learning the work of research by interviewing informants and transcribing the interviews myself, which is the primary objective of a masters thesis. (2) As discussed earlier in limitations, representativeness of perspectives from low and middle income countries would be important to include if I was doing the study again. Although not intentionally excluded, potential study participants included individuals who represented these regions, however I was unable to interview them.

## **Conclusions**

This project adds a perspective to the literature that builds on the existing inter-organizational collaboration specific to the context of disasters and health, presented in a pragmatic format intended for policy development and future research. While many of the findings are not new ideas, results that are consistent with what is already known may demonstrate that little has changed in terms of pitfalls of planning or practice in humanitarian contexts or domestic disaster planning. However, these results are also indicative that perhaps there are more gains being made in terms of recognizing the necessity of collaboration in order to achieve positive health outcomes for communities affected by natural disaster; future planning efforts will continue the momentum.

## References

- Ahn, Y., Bagrow, J. P., & Lehmann, S. (2010). Link communities reveal multiscale complexity in networks. *Nature*, 466(7307), 761-U11. doi:10.1038/nature09182
- Alvarez, E., Patino, D.F., & Wilson, M. (2016) *Finding and using evidence to inform health-system responses for disaster relief*. [Power Point Slides] Pan-American Health Organization, Washington D.C.
- Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography*, 28(1), 31-56. doi:10.1191/0309132504ph469oa
- Bloor, M. (1997). Techniques of validation in qualitative research: a critical commentary. In Miller, G., & Dingwall, R. *Context and method in qualitative research* (pp.38-50). London: SAGE Publications Ltd.
- Bowen, G. A. (2008). Naturalistic inquiry and the saturation concept: A research note. *Qualitative Research*, 8(1), 137 -152.
- Brown, J., & Duguid, P. (2001). Knowledge and organization: A social-practice perspective. *Organization Science*, 12(2), 198-213. doi:10.1287/orsc.12.2.198.10116
- Charmaz, K. (2006). *Constructing Grounded Theory*. Sage Publications Ltd., Thousand Oaks, CA.
- Cook, S., & Brown, J. (1999). Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. *Organization Science*, 10(4), 381-400. doi:10.1287/orsc.10.4.381
- Corroboration. (n.d.) In *Merriam Webster Dictionary online*. Retrieved from: <https://www.merriam-webster.com/dictionary/corroboration>
- Daniel, J. (2015). Sampling: the foundation of good research. In Guest G., & Namey, E. *Public health research methods* (pp. 511-552). 55 City Road, London: SAGE Publications Ltd. doi: 10.4135/9781483398839
- Description. (n.d.) In *Oxford English Dictionary online*. Retrieved from: <http://www.oed.com.libaccess.lib.mcmaster.ca/view/Entry/50741?redirectedFrom=description&>

- Duguid, P. (2005). "The art of knowing": Social and tacit dimensions of knowledge and the limits of the community of practice. *Information Society*, 21(2), 109-118. doi:10.1080/01972240590925311
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70, 113-136. doi:10.1348/000709900158001
- Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., et al. (2010). What is an adequate sample size? operationalising data saturation for theory-based interview studies. *Psychology & Health*, 25(10), 1229-1245.
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? data saturation in qualitative research. *Qualitative Report*, 20(9), 1408-1416.
- Gertler, M. (2003). Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). *Journal of Economic Geography*, 3(1), 75-99. doi:10.1093/jeg/3.1.75
- Giacomini, M. (2012). Theory matters in qualitative health research. In I. Bourgeault, R. Dingwall & R. De Vries (Eds.), *The SAGE handbook of qualitative methods in health research* (pp. 125-156). London: SAGE Publications Ltd.
- Given, L. M. (2008). *The SAGE encyclopedia of qualitative research methods* (Vols. 1-0). Thousand Oaks, CA: SAGE Publications Ltd.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? an experiment with data saturation and variability. *Field Methods*, 18(1), 59-82.
- Hennick, M.M. (2017). Code saturation versus meaning saturation: how many interviews are enough? *Qualitative Health Research*, 27(4), 591-608.
- Homburg, C., Klarmann, M., Reimann, M., & Schilke, O. (2012). What drives key informant accuracy? *Journal of Marketing Research*, 49(4), 594-608.
- Hughes, L. C., & Preski, S. (1997). Using key informant methods in organizational survey research: Assessing for informant bias. *Research in Nursing & Health*, 20(1), 81-92.
- Kumar, N., Stern, L. W., & Anderson, J. C. (1993). Conducting interorganizational research using key informants. *Academy of Management Journal*, 36(6), 1633-1651.
- Lam, A. (2000). Tacit knowledge, organizational learning and societal institutions: An integrated framework. *Organization Studies*, 21(3), 487-513. doi:10.1177/0170840600213001

- Leonard, D., & Sensiper, S. (1998). The role of tacit knowledge in group innovation. *California Management Review*, 40(3), 112-+. doi:10.2307/41165946
- Levin, D., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science*, 50(11), 1477-1490. doi:10.1287/mnsc.1030.0136
- Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009). Evolution of Wenger's concept of community of practice. *Implementation Science*, 4, 11. doi:10.1186/1748-5908-4-11
- Lincoln, Y. S. (2010). Emerging criteria for quality in qualitative and interpretive research. In P. Atkinson, & S. Delamont (Eds.), *SAGE qualitative research methods* (). Thousand Oaks, California: SAGE Publications, Inc. doi:<http://dx.doi.org.libaccess.lib.mcmaster.ca/10.1177/107780049500100301>
- Lingard, L., Vanstone, M., Durrant, M.,...Tallet, S. Conflicting messages: examining the dynamics of leadership on interprofessional teams. *Academic Medicine*, 87(12), 1762-1767.
- LoBondio-Wood, G., Haber, J. & Singh, M.D. (2009). Rigour in Research. In Cameron, C. & Singh, M.D. (Eds.), *Nursing Research in Canada: Methods and Critical Appraisal for Evidence-Based Practice*. (pp. 297-320). Toronto, ON: Elsevier Canada.
- Majid, U. & Vanstone, M. (2018). Appraising Qualitative Research for Evidence Syntheses: A Compendium of Quality Appraisal Tools. *Qualitative Health Research*. In Press.
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research*, 26(13), 1753-1760.
- Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in is research. *Journal of Computer Information Systems*, 54(1), 11-22.
- Marshall, M. (1996). The key informant technique. *Family Practice*, 13(1), 92-97.
- Maskell, P., & Malmberg, A. (1999). Localised learning and industrial competitiveness. *Cambridge Journal of Economics*, 23(2), 167-185. doi:10.1093/cje/23.2.167

- Miles, M.B., Huberman, A.M., Saldana, J. *Qualitative data analysis: a methods sourcebook* (2014). Los Angeles, California: SAGE Publications Inc.
- Mills, J. (2014). Methodology and Methods. In Mills, J., & Birks, M. *Qualitative methodology* (pp.31-47). 55 City Road, London: SAGE Publications Ltd. doi: 10.4135/9781473920163
- Neergaard, H., & Ulhoi, J. P. (2006). Government agency and trust in the formation and transformation of interorganizational entrepreneurial networks. *Entrepreneurship Theory and Practice*, 30(4), 519-539. doi:10.1111/j.1540-6520.2006.00133.x
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description - the poor cousin of health research? *BMC Medical Research Methodology*, 9, 52.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37. doi:10.1287/orsc.5.1.14
- Nonaka, I., & von Krogh, G. (2009). Tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory. *Organization Science*, 20(3), 635-652. doi:10.1287/orsc.1080.0412
- O'Reilly, M., & Parker, N. (2013). 'Unsatisfactory saturation': A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*, 13(2), 190-197.
- Osterloh, M., & Frey, B. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science*, 11(5), 538-550. doi:10.1287/orsc.11.5.538.15204
- Paradis, E., & Varpio, L. (2018). Difficult but important questions about the ethics of qualitative research. *Perspectives on Medical Education*, 7(2), 65-66.
- Patton, M. (2018). Expert sampling. In B. Frey (Ed.), *The SAGE encyclopedia of educational research, measurement, and evaluation* () SAGE.
- Qualitative research-a reflexive stance. (2014). In Lichtman, M. *Qualitative research for the social sciences* (pp.27-52). 55 City Road, London: SAGE Publications Ltd. doi: 10.4135/9781544307756
- Qualitative. (n.d.) In *Oxford English Dictionary online*. Retrieved from: <http://www.oed.com.libaccess.lib.mcmaster.ca/view/Entry/155875?redirectedFrom=qualitative#eid>

- Reber, A. (1989). Implicit learning and tacit knowledge. *Journal of Experimental Psychology-General*, 118(3), 219-235. doi:10.1037/0096-3445.118.3.219
- Reynolds, J., Kizito, J., Ezumah, N., Mangesho, P., Allen, E., & Chandler, C. (2011). Quality assurance of qualitative research: A review of the discourse. *Health Research Policy and Systems*, 9(43)
- Saldaña, J. (2014). Coding and analysis strategies. In P. Leavy (Ed.), *The oxford handbook of qualitative research* (pp. 581-605, Chapter xxiii, 756 Pages). New York, NY, US: Oxford University Press, New York, NY.
- Sandelowski, M. (1995). Sample-size in qualitative research. *Research in Nursing & Health*, 18(2), 179-183.
- Sandelowski, M. (1999). Time and qualitative research. *Research in Nursing & Health*, 22(1), 79-87.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334-340.
- Sandelowski, M. (2001). Real qualitative researchers do not count: The use of numbers in qualitative research. *Research in Nursing & Health*, 24(3), 230-240.
- Sandelowski, M. (2010). What's in a name? qualitative description revisited. *Research in Nursing & Health*, 33(1), 77-84.
- Sandelowski, M., & Barroso, J. (2003). Classifying the findings in qualitative studies. *Qualitative Health Research*, 13(7), 905-923.
- Sandelowski, M., & Leeman, J. (2012). Writing usable qualitative health research findings. *Qualitative Health Research*, 22(10), 1404-1413.
- Tsoukas, H. (1996). The firm as a distributed knowledge system: A constructionist approach. *Strategic Management Journal*, 17, 11-25. doi:10.1002/smj.4250171104
- Tsoukas, H., & Vladimirou, E. (2001). What is organizational knowledge? *Journal of Management Studies*, 38(7), 973-993. doi:10.1111/1467-6486.00268
- Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences*, 15, 398-405.

Varpio, L., Ajjawi, R., Monrouxe, L. V., O'Brien, B. C., & Rees, C. E. (2017). Shedding the cobra effect: Problematising thematic emergence, triangulation, saturation and member checking. *Medical Education*, *51*(1), 40-50.

von Krogh, G. (1998). Care in knowledge creation. *California Management Review*, *40*(3), 133-+. doi:10.2307/41165947

Wagner, S. M., Rau, C., & Lindemann, E. (2010). Multiple informant methodology: A critical review and recommendations. *Sociological Methods & Research*, *38*(4), 582-618.

Wenger, E., & Snyder, W. (2000). Communities of practice: The organizational frontier. *Harvard Business Review*, *78*(1), 139-+.

Zoraster, R. (2010). Disaster Coordination Needs More than the “Health Cluster”. *Prehospital and Disaster Medicine*, *25*(4), 372-373.  
doi:10.1017/S1049023X00008384



## APPENDICES

### Appendix 2.A

Key Features of an Effective National Plan for Disaster Response  
Informed by International Expertise

Davey, L  
Version 4  
January 31, 2017

PROTOCOL  
January 31, 2017

#### Investigators:

##### Principal Investigator:

Meredith Vanstone, PhD  
Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
E-mail: [vanstomg@mcmaster.ca](mailto:vanstomg@mcmaster.ca)  
905-525-9140 x22113

##### Student Investigator:

Laura Davey, RN, CPN(C)  
MSc Health Sciences Education program  
McMaster University  
Hamilton, ON, Canada  
E-mail: [daveyl1@mcmaster.ca](mailto:daveyl1@mcmaster.ca)

##### Co-Investigator:

Lynda Redwood-Campbell, MD, FCFP, DTMH, MPH  
Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
Email: [redwood@mcmaster.ca](mailto:redwood@mcmaster.ca)

## BACKGROUND AND RATIONALE

International disaster and emergency management organizations and individuals who provide health services in international disaster settings have valuable experience and knowledge. We hypothesize that lessons learned from international disaster responses may be applied to the Canadian domestic context, although the research in this area is limited.

The potential for disasters in Canada has been realized, demonstrating the need for effective disaster and emergency preparedness. The system in Canada has been described by Henstra & McBean (2016) as a “patchwork approach within the Provinces” (p. 14), which is imagined to limit the ability for adequate preparedness and an organized emergency response. Studies surveying the perceptions of provincial trauma centres

(Gomez et al. 2011) and Canadian nurses (O’Sullivan et al. 2008), cite overall impressions of need for improvements in strategic planning.

The purpose of this study is to explore the successes and challenges encountered in international disaster and emergency medicine response and identify the key features of effective systems for disaster and emergency management that could be applicable to the Canadian domestic system.

## OBJECTIVE

The objective of this study is to inform future Canadian disaster management planning activities. The research question is: What do international disaster and emergency medicine experts identify as key features of an effective national plan for disaster response?

## STUDY DESIGN & METHODOLOGY

This is a qualitative study using qualitative description methodology (Sandelowski, 2000, 2010). Sandelowski states that “the value of qualitative description lies not only in the knowledge its use can produce, but also as a vehicle for presenting and treating research methods as living entities that resist simple classification” (2010, p.83). It is a two phase study design beginning with key informant interviews. This current protocol details the first phase; we will seek REB amendment for phase 2 at a later date.

## SAMPLING & RECRUITMENT

We will use purposive and snowball sampling in order to recruit a diverse group of participants with various backgrounds and professional involvement in international disaster response. Participants will be recruited in order to represent diverse health care and service provider perspectives (such as primary care physicians, nurses, pharmacists, surgeons, mental health), logistics and communication, operations and management, trainers, academics and experts from stakeholder groups (e.g. Non-government Organizations, Governmental Organizations, and Partners).

We will locate participants through publicly available information and professional networks. Publicly available sources include organizational websites that list names and contact information for people in specific positions, e.g. director of operations of the Canadian Red Cross. They may also include reports or white papers issued by these organizations, public LinkedIn profiles, public lists of members of interest groups, etc. Our research team includes several people who are active in this community. They will circulate our recruitment notice through their professional networks.

All participants will be adults. They are selected for their professional roles in relation to disaster medicine and emergency response management. For example, we will be interested in speaking with people who act in various roles within the domains of health care services delivery, human resources, emergency management, provincial operations, government relations, communications, external partnership management and organization executive. Participants may or may not have a current professional role in this area. For example, they may be retired or have changed careers. If a participant self-identifies as having expertise in this area, they are included in our study.

We will recruit participants until we reach theoretical sufficiency. Sufficiency means the point at which new data will fit into thematic categories established from previously analysed data (Varpio et al. 2017). From past experience, we anticipate that this will occur between 15-30 participants.

We anticipate that many of these people will be attendees at the World Association of Disaster and Emergency Medicine World Congress in Toronto, Ontario. We plan to recruit participants through e-mail circulated prior to the conference. The conference will also serve as an opportunity to conduct in-person interviews.

## DATA COLLECTION

Semi structured in-depth interviews will be conducted with these key informants. Interviews will be conducted in person, over telephone or Skype, according to participant preference, and will last 30-60 minutes in duration. All interviews will be audio- recorded and transcribed verbatim.

Some demographic information will be collected (e.g. professional role, years experience in humanitarian setting). In the final report, demographic data will be reported by general role, such as clinician, management or logistics. Demographic data such as country for a specific experience may be linked to a quote, in order to add contextual information. Direct quotes may be described by country or job role.

To protect participant privacy, any identifying information, including name, that appears on the transcript interview will be removed and replaced with a non-identifying placeholder. Personal information will be kept separate from the transcripts, and will only be linked through a coded list which will be stored separately in a locked cabinet in the faculty supervisor's private office at her workplace. The data will be aggregated during analysis, and no individual person's comments will be identifiable.

## DATA ANALYSIS

We will conduct a descriptive analysis using grounded theory analytical strategies (Charmaz, 2006), including a staged coding strategy consisting of line by line coding, focused coding, and theoretical coding, whereby the data is analyzed descriptively and interpretively. This strategy facilitates constant comparative analysis, whereby the data is analyzed both descriptively and interpretively. Categories and themes identified at each stage of coding are compared, contrasted and re-grouped. Data analysis proceeds concurrently with data collection, with analytical insights informing future collection of data.

## REFERENCES

- Raikes, J. & McBean, G. (2016). Responsibility and liability in emergency management to natural disasters: a Canadian example. *International Journal of Risk Reduction*, 16, 12-18.
- Gomez, D., Haas, B. Ahmed, N., Tien, H., & Nathens, A. (2011). Disaster preparedness of Canadian trauma centres: the perspectives of medical directors of trauma. *Canadian Journal of Surgery*, 54(1), 9-16.
- O’Sullivan, T.L., Dow, D., Turner, M.C., Lemyre, L., Corneil, W.,... Amaratunga, C.A. (2008). Disaster and emergency management: Canadian nurses’ perceptions of preparedness on hospital front lines. *Prehospital and Disaster Medicine*, 23 (S1), s11-18.
- Sandelowski, M. (2000). Focus on research methods: what ever happened to qualitative description? *Research in Nursing & Health*, 23, 334-340.
- Sandelowski, M. (2010). What’s in a name? Qualitative description revisited. *Research in Nursing & Health*, 33, 77-84.
- Varpio, L., Ajjawi, R., Monrouxe, L.V., O’Brien, B.C., & Rees, C.E. (2017). Shedding the cobra effect: problematising thematic emergence, triangulation, saturation and member checking. *Medical Education*, 51, 40-50.
- Charmaz, K. (2006). *Constructing Grounded Theory*. Sage, Thousand Oaks, CA.

## Appendix 2.B



### PARTICIPANT INFORMATION SHEET AND CONSENT

#### Key Features of an Effective National Plan for Disaster Response Informed by International Expertise

##### Investigators:

###### Principal Investigator:

Meredith Vanstone, PhD  
Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
E-mail: [vanstomg@mcmaster.ca](mailto:vanstomg@mcmaster.ca)  
905-525-9140 x22113

###### Student Investigator:

Laura Davey, RN, CPN(C)  
MSc Health Sciences Education program  
McMaster University  
Hamilton, ON, Canada  
E-mail: [daveyl1@mcmaster.ca](mailto:daveyl1@mcmaster.ca)  
807-621-7346

###### Co-Investigator:

Lynda Redwood-Campbell, MD, FCFP, DTMH, MPH  
Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
Email: [redwood@mcmaster.ca](mailto:redwood@mcmaster.ca)

---

You are being invited to participate in a research study, the purpose of which is to identify the challenges and successes encountered in international disaster and emergency medicine response. You are being asked to participate because of your experience working in international disaster and emergency medicine response. This research is being conducted as part of Laura Davey's Master's thesis.

In order to decide if you would like to participate in this research study, you should understand what is involved and the potential risks and benefits. This form gives detailed information about the research study, which will also be discussed with you. Once you understand the study, you will be asked to sign this form if you wish to participate.

#### What will my responsibilities be if I take part in the study?

Participation in this study involves an individual interview. The interview will take place in person, and be 30 to 60 minutes in length. If you prefer, the interview may take place by telephone or Skype at a time that is convenient for you. We are interested in your experiences in international disaster and emergency response and your thoughts about the knowledge, skills, attributes and capacities that are needed for an effective response system.

### **What are the potential harms, risks or discomforts?**

It is not likely that there will be any harms or discomfort associated with this study. You may experience discomfort when discussing past experiences, depending upon the nature of these experiences. You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. You can end the interview at any time. We describe below the steps we are taking to protect your privacy.

### **What are the potential benefits for me and/or society?**

Although the research may not benefit you directly, we hope to learn more about the characteristics of effective disaster response and emergency systems internationally, through your experiences. We hope that stakeholders in the domestic system may use the results to inform strategic planning in health services delivery, preparedness, and organizational structure and partnerships for an effective disaster and emergency medicine response system.

### **What information will be kept private?**

Your data will not be shared with anyone except with your consent or required by law. To protect your privacy, any identifying information, including your name, that appears on the transcript interview will be removed and replaced with a non-identifying placeholder. Your personal information will be kept separate from the transcripts, and will only be able to be linked to the transcripts through a coded list which will be stored separately in a locked cabinet in the faculty supervisor's private office at her workplace. Once your data collection is complete, we will destroy any record of your personal information (such as name, phone number, professional title). Demographic information about the participants (e.g. role, number of years of experience) will only be reported in aggregate form.

The audio-recordings of the interviews, the de-identified transcripts, and consent forms will be kept secure. The electronic materials will be kept encrypted and stored on a password –protected computer. Audio recordings will be destroyed after 5 years.

### **Can participation in this study end early?**

Your participation in this study is voluntary. If you decide to be part of the study, you can decide to withdraw, at any time, even after signing the consent form or part-way through the interview. If you do not want to answer some of the questions you do not have to, and you can still be in the study. If you choose to withdraw, please email the student investigator, Laura Davey (daveyl1@mcmaster.ca). Please note that once you have completed an interview, it may not be possible to remove your information from the analysis. However, no direct quotes will be used from your data.

### **Information about the Study Results**

We expect to have this study completed by approximately May, 2018. If you would like a brief summary of the results, please let us know how you would like it sent to you.

### **Questions about the Study**

If you have questions or need more information about the study itself, please contact the student investigator at:

Laura Davey  
Health Science Education Masters program  
McMaster University  
807-621-7346  
daveyl1@mcmaster.ca

Or the faculty supervisor:

Meredith Vanstone, PhD  
Department of Family Medicine  
McMaster University  
905-525-9140 ext. 22113  
vanstomg@mcmaster.ca

This study has been reviewed by the Hamilton Integrated Research Ethics Board (HiREB). The HiREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, HiREB, at 905.521.2100 x 42013

---

## **CONSENT**

### **Participant:**

I have read the preceding information thoroughly. I have had an opportunity to ask questions and all of my questions have been answered to my satisfaction. I agree to participate in the study. I understand that I will receive a signed copy of this form.

---

Name of Participant (Printed)

Signature

Date

**Person Obtaining Consent:**

I have discussed the study in detail with the participant. I believe the participant understands what is involved in the study.

---

Name and Role (Printed)

Signature

Date



## Appendix 2.C

April 6 2017

Project Number: 2914

Project Title: Key Features of an Effective National Plan for Disaster Response Informed by International Expertise

Student Principal Investigator: Ms. Laura Davey

Local Principal Investigator: Dr Meredith Vanstone

We have completed our review of your study and are please to issue our final approval. You may now begin your study.

The following documents have been approved on both ethical and scientific grounds:

Document Name Document Date Document Version

Interviewguide\_-Jan-30-2017\_v1 Jan-30-2017 1

ParticipantInfo&Consent\_Apr-2-2017\_v1.3 Apr-02-2017 1.3

Protocol\_Jan-31-2017\_v4 Jan-31-2017 4

Recruitment-mail\_Apr-2-2017\_v4 Apr-02-2017 4

RecruitmentPhone\_Jan-31-2017\_v2 Jan-31-2017 2

Any changes to this study must be submitted with an Amendment Request Form before they can be implemented.

This approval is effective for 12 months from the date of this letter. Upon completion of your study please submit a Study Completion Form.

If you require more time to complete your study, you must request an extension in writing before this approval expires.

Please submit an Annual Review Form with

your request.

PLEASE QUOTE THE ABOVE REFERENCED PROJECT NUMBER ON ALL FUTURE CORRESPONDENCE

Good luck with your research,

Kristina Trim, PhD, RSW

Chair, HiREB Student Research Committee

McMaster University

The Hamilton Integrated Research Ethics Board (HiREB) represents the institutions of Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, and the Faculty of

Health Sciences at McMaster University and operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement

on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug

Regulations of Health Canada, and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations; for studies conducted

at St. Joseph's Healthcare Hamilton, HiREB complies with the health ethics guide of the Catholic Alliance of Canada

Page 1 of 1

## Appendix 2.D

### Amendment Approval

April 10 2018

HiREB Project #: 2018-2914

Local Principal Investigator: Dr Meredith Vanstone

Project Submission Title: Key Features of an Effective National Plan for Disaster Response Informed by International Expertise

Document(s) Amended with version # and date:

Document Name Document Date Document Version

Interviewguide\_-Mar-15-2018\_v2 Mar-15-2018 2

ParticipantInfo&Consent\_Mar-15-2018\_v4 Mar-15-2018 4

Protocol\_Mar-15-2018\_v5 Mar-15-2018 Version 5

Recruitment-mail\_Mar-15-2018\_v5 Mar-15-2018 5

We have completed our review of your amendment and are pleased to issue our final approval. You may now continue your study as amended.

Dr. Kristina Trim

Chair, HiREB Student Research Committee

The Hamilton Integrated Research Ethics Board (HiREB) represents the institutions of Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, and the Faculty of

Health Sciences at McMaster University and operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement

on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug

Regulations of Health Canada, and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations; For studies

conducted at St. Joseph's Healthcare Hamilton, HiREB complies with the health ethics guide of the Catholic Alliance of Canada

Page 1 of 1

## Appendix 2.E

### Key Features of an Effective National Plan for Disaster Response Informed by International Expertise

#### Interview Guide

[Pre-amble. This is a research study about gaining insights from people with disaster and emergency management experience internationally in order to identify the key features of effective systems that might be useful in Canada. I'm going to ask you some questions about .... There are no right or wrong answers, we are interested in your thoughts and experiences. Feel free to skip any question you don't feel comfortable answering. We can stop at any time.... Now, before we begin, I want to talk about how we will keep your identity confidential. We won't report any individual demographic data. For instance, we won't say that the Chief Operations Officer of the Canadian Red Cross from 2002-2010 participated this research. We will only report high level information in aggregate, e.g. that 10 clinicians, 3 infrastructure experts and 7 managers participated and they represented Canada, Norway, the US and the UK, and they had a median 18 years of experience. Does that sound ok?

1. To start, could you tell me a bit about your experience with international disaster and emergency management?
  - a. What type of roles? In what countries?
  - b. What level of experience?
  - c. (Phase) Planning vs response
  - d. How long?
2. As you know, we are interested in identifying some of the key features of national systems of disaster preparedness and response. Is there a country that sticks out to you as having an excellent system? What is it about that system that makes it excellent to you?
  - a. Are they equally well prepared for all types of hazards?
  - b. What do they do differently or uniquely from other countries?
  - c. Is there anything you don't think they do well?
3. Now I'll ask the reverse- can you think of a high resource country that has a poorly prepared system? What is it about that system that is weak?
4. Think about a particular disaster or emergency that you have been involved in. What went well about the response in that instance?
5. What went poorly?  
Can you tell me how that differed from your expectation?

6. What do you think government or legislators can do to prepare for disaster response in countries that have significant resources?
7. What do you think the role of clinicians is?
8. What other groups have responsibility for disaster preparedness and response? What is their role?
9. How do you think governments make decisions about when and how to bring in additional resources?
10. Now, is there anything you feel is important from your experiences that you would like to add?

## Appendix 2.F

### Key Features of an Effective National Plan for Disaster Response Informed by International Expertise

#### Interview Guide Version 2

[Pre-ambule. This is a research study about gaining insights from people with disaster and emergency management experience internationally in order to identify the key features of effective systems that might be useful in Canada. I'm going to ask you some questions about .... There are no right or wrong answers, we are interested in your thoughts and experiences. Feel free to skip any question you don't feel comfortable answering. We can stop at any time.... Now, before we begin, I want to talk about how we will keep your identity confidential. We won't report any individual demographic data. For instance, we won't say that the Chief Operations Officer of the Canadian Red Cross from 2002-2010 participated this research. We will only report high level information in aggregate, e.g. that 10 clinicians, 3 infrastructure experts and 7 managers participated and they represented Canada, Norway, the US and the UK, and they had a median 18 years of experience. Does that sound ok?

1. To start, could you tell me a bit about your experience with disaster and emergency management?
  - a. What type of roles? In what countries?
  - b. What level of experience?
  - c. (Phase) Planning vs response
  - d. How long?
  
2. As you know, we are interested in identifying What successful collaborations between governments and NGOs following a natural disaster look like. Could you tell me about an effective collaboration you have participated in between agencies? It doesn't matter if your experience was in planning or response; I'm interested in hearing about what effective collaboration between agencies looks like.
  - a. What made it successful? How do you define success in this context?
  - b. What did the leadership structure look like in this example?
  - c. Did each agency participate equally in all activities? If not who led what aspects?
  - d. Did you have a sense of which plans were formal or informal? (roadmap vs. self organizing)

3. Think about a particular disaster or emergency that you have been involved in. Was your organization's needs assessment in the medical response the same as the government's assessment? If not, what was in disagreement?
4. What plans are currently in place for future partnerships?
  - a. How are they developed and updated?
  - b. How do people within an organization understand the capacities and resources of the partnering organization?
5. What does good communication look like? How can we plan for this?
6. What kind of personnel expertise is needed that is different from day to day operations?
7. How does trust influence collaboration in a disaster response?
8. From your experience, what feature of your team was important for a strong health systems response?
9. Based on challenges you have experienced in the past, how would you advise organizations to change or modify their disaster planning in the future?
10. If you were stuck in an elevator with your Minister of Health or a top government official capable of influencing disaster planning in your country, what advice would you give them?
11. Are there any components that you feel were important in delivering a strong medical response that I have not asked about? / Is there anything that I haven't asked you that you feel is important?

## **Appendix 2.G**

### **RECRUITMENT E-MAIL**

Recruitment e-mail: WADEM Congress for Disaster and Emergency Medicine 2017  
To be sent from contact from conference organization or professional organization

Subject: Share your experiences in international disaster or emergency response

Dear (group name – such as WCDEM 2017 attendee or professional group member):

Do you have experience and/or expertise in disaster management or as part of an international disaster and emergency response team? If so, we would like to invite you to participate in a research study that aims to understand the key features of effective disaster and emergency responses internationally that could be used to inform the Canadian disaster and emergency response system. We'd like to interview you about your experiences. The interview will be completely confidential and can be conducted in person during the WADEM Congress on Disaster and Emergency Medicine in Toronto, Canada between April 25-30, 2017, or at another time of your choice by telephone or Skype. The interview will ask you about your experiences and some of your feelings about successful teams, organizations, systems and planning during international disaster and emergency response.

This study is part of a Master's thesis, and is not a part of the WCDEM program. It is entirely voluntary and interview data will not be shared with anyone outside of the research team. Please see the attached information letter about how your information and ideas will be kept safe and confidential.

If you are interested in participating, please contact the student investigator at: [daveyl1@mcmaster.ca](mailto:daveyl1@mcmaster.ca) or 807-621-7346

You may also contact Dr. Meredith Vanstone or Dr. Lynda Redwood-Campbell with questions you might have,

#### **Investigators:**

##### **Principal Investigator:**

Meredith Vanstone, PhD  
Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
E-mail: [vanstomg@mcmaster.ca](mailto:vanstomg@mcmaster.ca)  
905-525-9140 ext22113

##### **Student Investigator:**

Laura Davey, RN, CPN(C)  
Health Sciences Education  
McMaster University  
Hamilton, ON, Canada  
E-mail: [daveyl1@mcmaster.ca](mailto:daveyl1@mcmaster.ca)  
807-621-7346

##### **Co-Investigator:**

Lynda Redwood-Campbell, MD, FCFP, DTMH, MPH

Department of Family Medicine  
McMaster University  
Hamilton, ON, Canada  
Email: [redwood@mcmaster.ca](mailto:redwood@mcmaster.ca)



**Appendix 3.A**

**Table 2: Suggestions for Improving Inter-organizational Collaboration**

<b>TABLE 2</b>
<b><u>Category 1 - Necessary Aspects of Planning</u></b>
1.1 Cohesive disaster planning is needed at national and local level, with the recognition of what is needed by an organization that deals with more frontline operations, yet is not gaining traction or generating results
1.2 Attending to regional vulnerabilities – specialized planning is needed for rural or underserved areas. Resources are concentrated in urban areas, and not always proportional to risk, during a disaster existing resources are often relied upon until outside assistance is brought in
1.3 Planning should involve clinicians – health care personnel should be engaged in development of disaster plans, not solely relied upon to provide services when needed.
1.4 Formalized planning processes in collaboration with those with expertise
1.5 Financial incentives are needed to ensure planning is complete. There is often variability in the preparedness of individual hospitals and local systems.
1.6 Working through logistical issues before they happen.
1.7 Removing bureaucratic barriers to health services delivery was discussed as important for operations in a disaster in that sometimes requirements and expectations for health care provider qualifications and licensure can be a barrier to mobility in disaster contexts at state levels.
<b><u>Category 2 – Activities to enhance inter-organizational collaboration (Removing Barriers to Collaboration)</u></b>
2.1 Recognition of everyone having a role in the planning rather than simply as providers in the context of a disaster.
2.2 Physical meetings
2.3 Planning joint exercises.
2.4 Formalize informal network structure.
2.5 Invest in collaboration – offering joint project funding, providing financial incentives for collaboration, devote time and space for collaborative work.
2.6 Political barriers limit utilization of resources and expertise.
2.7 Successful collaboration on a small level relates to the larger level.
<b><u>Category 3 – Knowledge sharing for health</u></b>

3.1 Meaningful data collection is needed for health service delivery activities and outcomes in disaster contexts.
3.2 Emphasize transparency of activities to increase accountability.
3.3 Knowing where to locate trustworthy information is a challenge – confusion exists about how and where to access information and how it is being managed.
3.4 Quality of evidence reviews related to disaster context needed – in development
3.5 International organizations have expertise and knowledge useful for planning domestic activities.
3.6 Accessible and evidence informed, quality tools for clinicians needed for decision making in the field.
3.7 Clinical knowledge is region specific – when working outside local area, recognition and knowledge of health issues of that population is necessary.
<b><u>Category 4 – Decision making priorities</u></b>
4.1 Decisions should be based on actual health needs of people (not funding, public pressure or political factors).
4.2 Timeliness in making a decision despite having limited information is key.
4.3 Understanding the essence of the issue is key to addressing it.
4.4 A systematic approach based on evidence.
4.5 Resources and priorities change with governments.
4.6 Individuals who lead organizations determine priorities.
<b><u>Category 5 – Attending to educational requirements of health care personnel</u></b>
5.1 Adaptation training is needed. Moving from a context with an abundance of resources to scarcity of resources presents difficulty in practice, including clinical decision making.
5.2 Managing ethical dilemmas should be approached prior to an actual disaster, with supports available during an event.
5.3 Clinicians need to be prepared to work more independently, outside comfort level, as health services delivery in a disaster context can be a different structure than they are accustomed to.
5.4 Individual perception of preparedness is important for health services delivery. Simulation training, scenarios and exercises are strategies that might be used to enhance feelings of preparedness.
<b><u>Category 6 – Clearly articulated health system governance structure</u></b>
6.1 A clear chain of command is needed for quick activation.
6.2 Attempts to resolve jurisdictional issues prior to an event is a part of effective planning.

<b><u>Category 7 – Enhanced communication strategies</u></b>
7.1 Important information should be easy to share.
7.2 Distributed nature of communications needs require technologies to support this.
7.3 There is a need for an accepted common language.
7.4 Jargon complicates understanding and creates a barrier to engagement, segregating aspects that should be integrated.
7.5 Effective communication follows an established process.
<b><u>Category 8 – Formalized process and policy work to strengthen system</u></b>
8.1 Policies, frameworks, memorandums of understanding can aide to ensure continuity of core values as individuals change roles.
8.2 Standards, guidelines and protocols enhance decision making, aide successes and can prevent inappropriate activities through defined accountabilities.
8.3 Systems require testing to identify gaps and vulnerabilities.