

IN THE INFERNO:  
CRITICAL INCIDENT STRESS MANAGEMENT PROGRAMS IN THE FIRE SERVICE  
-  
WHAT WORKS & HOW DO WE KNOW?

By

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## CHAPTER 1: STUDY BACKGROUND

### 1.1 Introduction

*One hand  
Reaches out  
And pulls a lost soul from harm...  
...I do this so this world will know  
That it will not change me.  
As long as one heart still holds on  
Then hope is never really gone.*

“The Change” (Arata & Tester, 1995, track 6)

Rescue professions, and firefighters in particular, have assumed a higher profile in North American society since September 11, 2001. The public perception of the firefighter is one of heroism and romanticism – a mythical hero attired in 40 pounds of turnout gear, mounted on a bright red steed, racing through a darkened community into the sights, sounds, smells and reality of a rescue scene. Some firefighters embrace that hero mythology, some recoil from it, and some try to ignore it (Lewis, Tenzer, & Harrison, 1999). Underlying the hero-myth is an individual who is trying to keep the community safe – whether that community is New York, London, Ottawa, Vancouver, or a myriad of other districts and towns.

Firefighters are not single-incident heroes, but are the men, women, sons, brothers, daughters, sisters, parents and children of our communities; your friends and neighbours, coaches, preachers, bankers, and police officers. Many firefighters are from the *paid on-call* or volunteer fire service, just as many are career service. Whether career or volunteer, all are committed to the ideology of community responsibility, to rescue/response, and to caring

about, and for, others. All live the reality of service to others. In serving others and by focusing on the life-or-death needs of others, firefighters frequently neglect their own emotional and physical health. Dave Parker describes an "...attitude...it was an honour to be placed in the position of greatest danger..." (Parker, 1987, p. 79) that is part of the unique culture of the fire service. As a result of their service, the firefighter is at times faced with overwhelming occupational stressors that result in physical, emotional, cognitive, spiritual, and behavioural reactions. How do they recover from these traumatic events and carry on with their jobs and lives? What processes, skills, or knowledge do firefighters rely on to protect them when they face overwhelming events? How do they decompress when their fire tasks are completed?

The genesis of this study was an interest in the psychological support services provided to firefighters post-incident and disaster. Firefighters are considered to be at high risk of physical and psychological sequelae to their jobs because they routinely face risks and work in conditions that are beyond the norm of most occupations and trades. The British Columbia Professional Fire Fighters' Association reports a high number and a variety of occupational hazards faced by firefighters, including psychological stress (British Columbia Professional Firefighters Association, 1999).

High attrition rates across the disciplines of emergency services were noted in the United States following a series of unusual and gruesome events. It was noted that a substantial difference in the attrition rate of emergency services personnel occurred if personnel were given the opportunity, in a structured manner, to *discuss* their experiences shortly after an

event occurred (Mitchell & Bray, 1990). An American psychologist and retired firefighter/paramedic, Dr. Jeffrey Mitchell, began researching this phenomenon (which he called "critical incident stress") and ways of managing it. It was recognized by Mitchell (1983) and others (Lindemann, 1944; Raphael, Wilson, Meldrum, & McFarlane, 1996) that early intervention post-incident helped diminish distress and mitigate acute stress reactions. Mitchell's model was the first formalized program of psychological support offered in the emergency services. CISM is, essentially, a matrix of peer-led, clinician guided prevention, intervention, and post-vention services designed to help mitigate the effects of stress. One of the underlying assumptions of CISM is that critical incident stress reactions are normal responses to abnormal situations (Mitchell, 1983), not a pathological process such as PTSD (Raphael et al., 1996; van der Kolk, 1996). Mitchell's model has been adopted by many fire departments in North America.

## 1.2 The Problem

*Res Ipsa Loquitur*- mental health professionals and firefighters agree that psychological support is needed to assist those who have been exposed to the psychological hazards of the job. Results of research into Mitchell's CISM model, however, are inconsistent, and in fact, there is limited research on efficacy of any comprehensive post-incident support program. Some researchers claim that CISM is harmful (Gist & Woodall, 1995, 1998, 1999; Gist et al., 1997) while others claim it is helpful (Larsson, Tedfeldt, & Andersson, 1999; Mitchell, 1983; Stephens, 1997). The contradictions focus on two key points: first, does CISM mitigate the physical, emotional, cognitive, spiritual, and behavioural reactions of a critical incident; second, if it does mitigate these effects, how is that accomplished?

### **1.3 Purpose of the Study**

The purpose of this research study is to ascertain if, in the selected fire departments, **does CISM work? If so, what works and how do we know?**

My hypothesis is: CISM works. As well, it is anticipated that participants will report stress symptoms are decreased or mitigated by talking to others about their reactions and coping strategies. The null hypothesis is that CISM does not work; hence, there would be no decrease in symptoms of stress.

### **1.4 The Organization**

#### **1.4.1 Fire Service**

There are an estimated 9,000 firefighters in British Columbia. About 3,200 (British Columbia Professional Fire Fighters Association, 2002) of those are ‘career’ firefighters, defined as those who make a career of a trade (Abbotsford Fire Fighters Association, 1998). The balance are ‘volunteers’, ‘auxiliary’, or ‘paid on-call’ members: those who do not make a career of firefighting. The terms volunteer, auxiliary, and paid on-call are often used interchangeably within the fire service, but naming is a sensitive issue and there are various preferences. There are a number of iterations within the departments participating in this research. Generally, a volunteer firefighter receives no remuneration, but an auxiliary and paid on-call member receives compensation; all may be assigned to specific halls within a department and work alongside career members. In many departments, career members are



recruited from the auxiliary/paid on-call ranks. For the ease of writing, and in consultation with auxiliary, paid on-call, and volunteer firefighters, non-career members will be referred to in this report as ‘volunteers’. It is noted that this is a descriptor only, and does not relate to the functions performed, nor the commitment demonstrated by, non-career members.

There is often tension between the career and volunteer members of a fire department. All three fire departments in this study are ‘composite’ departments with a mix of career and volunteer members. All three departments cover urban and rural communities, with generally, the bulk of rural services provided by volunteer halls. Although composite in membership, hierarchal in nature, and firefighting in mandate, each department in the study is unique.

#### **1.4.1. a Surrey Fire Service**

The Surrey Fire Service is the largest composite department in Canada (Surrey - City of, 2002). There are over 275 career, and more than 240 volunteer firefighters working out of 17 halls. The department provides service to a geographic area of 342 square kilometres (or 132 square miles), and population of over 345,000. There are several branches that comprise the Surrey Fire Service, including fire suppression (operations), fire prevention, dispatch (communications), public education, training, administration, and mechanical. In 2001, the Surrey Fire Service responded to 21, 924 emergencies (Surrey – City of, 2002).

The Surrey Fire Service CISM program is about 10 years old, and utilizes the ICISF, or Mitchell, mode. The program is overseen by a CISM committee, consisting of 2 firefighters (members of the Surrey Fire Association), and 2 management members. The CISM program,

policies, and procedures are included in the Surrey Fire Service Operational Guidelines, which are available to fire service personnel at all fire halls. The CISM team provides primarily 1:1 peer support, and small group defusings. The CISM committee has also retained the services of specially trained mental health professionals who are available on an as-need basis for debriefings or demobilizations.

#### **1.4.1. b      Abbotsford Fire Rescue Service**

Abbotsford Fire Rescue Service has about 50 career and 150 volunteer firefighters working out of 7 halls. Abbotsford Fire Rescue (Abbotsford – City of, 2002b) provides service to 117,000 people over 375 square kilometres (145 square miles). In 2002, Abbotsford Fire Rescue responded to over 3000 calls (Abbotsford – City of, 2002a).

The Abbotsford Fire Rescue Service's CISM program is also about 10 years old. There is a designated team coordinator, and trained peer support members throughout the organization. Abbotsford Fire Rescue is using the ICISF model - a matrix of peer-led services. The team provides 1:1, "group defusings which are peer led and driven, and debriefings which are peer-driven though mental health professionals attend" (R. Scruton, personal communication, 2002). Pre-incident education is provided to all new firefighters, both career and volunteer. As well, Abbotsford Fire Rescue's CISM team is partnered with the community and provides training and interventions for several organizations such as schools, industry, business, municipal and recreation. In addition, the CISM team provides service to neighbouring fire departments. CISM team members are linked to the Employee and Family Assistance Program, and frequently act as referral agents.

### **1.4.1. c Nanaimo Fire Rescue**

Nanaimo Fire Rescue has about 62 career and 80 volunteer firefighters working out of 6 halls. Nanaimo Fire Rescue provides service to a population of 73,000 over a geographical area of 88 square kilometres (Nanaimo – City of, 2002b). Between June 2001 and June 2002, Nanaimo Fire Rescue responded to over 5100 calls, including 117 structure fires, 86 bush fires, 327 motor vehicle accidents, and 2507 medical aid calls (Nanaimo – City of, 2002a). The Nanaimo Fire Rescue Service is comprised of three branches: fire suppression, (which includes firefighters who not only fight fires but also provide rescue services, medical aid, and hazardous materials management; fire prevention which includes public education, fire safety, fire inspections, and fire investigation; and pre-fire planning.

Nanaimo Fire Rescue's CISM team is in a rebuilding phase this year. Due to attrition, schedule changes, promotions, etc., the team's membership has dropped and the program's visibility has decreased particularly with the volunteer members. There is an identified need for the program by various individuals at all levels of the organization, and the intent is to revitalize the program with new members, ongoing training, and awareness sessions at each hall. The operational guidelines for the CISM program have been re-written, and 7 Fire Rescue members participated in department-sponsored basic and extended CISM training in late 2002. As well, Workers' Compensation legislation requires that members of the fire services in British Columbia have access to CISM processes (Workers Compensation Board of British Columbia, 2000) which is a catalyst for all departments to re-think their programs.

### **1.4.2 Labour Relations in the Fire Service**

Most career firefighters belong to the union – the International Association of Fire Fighters (International Association of Firefighters, 2002), and the provincial British Columbia Professional Fire Fighters Association (BCPFFA). There are a few full-time firefighters who are exempt from the union, and some firefighters who work for private/industrial firms such as airports, forestry operations, pulp mills, etc. who may belong to different unions (D. Angrove, R. Daly, K. Douglas, & R. Scruton, personal communication, 2002). The organizational structure of the fire service is hierarchal and paramilitary in nature. The captains, lieutenants, and firefighters are members of the union local; assistant chiefs, deputy chief, and chief are excluded positions.

Within most fire departments in British Columbia, there is a more-or-less conflicted relationship between the union bargaining unit and management. This conflicted relationship between union and management is by no means confined to the fire service (British Columbia Nurses' Union, 2002; International Woodworkers of America-Canada, 2002), nor is the conflict confined to British Columbia. However, British Columbia has a long history with, and strong ties to, the labour movement, and trade unions remain a force to be reckoned with whenever workplace change is contemplated in the province. During the months this study was being conducted, municipal elections were taking place in British Columbia and the local unions in some municipalities attempted to make staffing levels at fire halls an election issue. This strained labour relations, and pitted union and management against each other; the fact that any of these fire departments agreed to participate in a research project in

the midst of such a strained labour climate is a testament to the joint union-management commitment to CISM in the fire service.

### **1.4.3 Other Common Stressors in the Fire Service**

As noted from the statistics and call records of the various departments, the firefighter's work has undergone significant transformation over the past years. The work environment has become more dangerous with a proliferation of illicit drug houses, 'grow ops', and 'meth labs'. A heightened sense of awareness of the dangers of fighting fires in these residences that have known and unknown hazards in the form of chemicals and booby-traps adds to the risks of the job. As well, there are less fire suppression calls and more medical aid requests, which expose firefighters to an increased contact with human suffering and trauma, and to risk of vicarious trauma.

## **1.5 Professional Terminology and Definitions**

### **1.5.1 Health promotion**

This project examines CISM from a health promotion perspective, distinctly different from the more common *pathology* or *disorder* of post-traumatic stress with its subsequent curative perspectives. Health promotion, as defined by the World Health Organization (WHO) in Kickbusch (1986), is "the process of enabling people to increase control over, and to improve, their health" (p. 322). Health enables an individual or group "to realize aspirations and satisfy needs", and "to change or cope with the environment. Health is therefore seen as a resource for everyday life, not the objective of living; it is a positive concept emphasizing social and personal resources, as well as physical capabilities" (Kickbusch, 1986, p. 322).

Labonte (1989) said: “Health exists in the dynamic movements of our social relationships” (p. 24), and “the power of defining health must belong to those who experience it” (p. 25).

## **1.5.2 Post-traumatic stress disorder**

*Critical Incident Stress* has been alluded to in medical and military literature for several hundred years, but ‘modern’ awareness began with military personnel during WW1. Soldiers who experienced the trauma of war as critical incidents had psychological responses that didn't allow them to return to the front; that trauma was referred to as ‘shell shock’. Military and paramilitary personnel continued to experience stress reactions that were variously referred to through the 20<sup>th</sup> century as: war neurosis, hysteria, battle shock, and post-traumatic stress syndrome (van der Kolk, Weisaeth, & van der Hart, 1996). *POST-TRAUMATIC STRESS DISORDER* (PTSD) is now a recognized psychiatric disorder, but only gained international interest after the return of American service personnel from Vietnam (Mitchell & Everly, 1995; van der Kolk et al., 1996).

Post-traumatic stress disorder is defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV) as the pathological end-product of exposure to life-threatening events such as serious accidents, natural disasters, violent personal assaults, etc., where the exposure involves fear, helplessness or horror. There are physiological as well as psychological changes that mark PTSD, and result in patients avoiding situations in which they may be ‘triggered’ or reminded of the event, re-experiencing the event through flashbacks or nightmares, have difficulty sleeping, and feel detached from society and themselves. PTSD is frequently found concurrently with related psychiatric disorders such as depression,

substance abuse, cognitive disorders, and other problems of physical and mental health. The disorder is characterized by significant distress, and impairment of social, family, and vocational functions.

### **1.5.3 Critical incident stress**

At the same time that psychological trauma and PTSD were being recognized as occupational hazards in military personnel, the civilian world was experiencing some unusual phenomena with emergency service personnel. For example, there was a large increase in numbers of people using airline travel. People were flying to near and far destinations in record numbers and airline travel became the transportation mode of choice - but as airline manifests increased, so did airplane crashes. Emergency service personnel that had been trained to save lives were instead being called to situations to pick up body parts by the thousands. No one paid much attention to this until the late 1970's, when it was recognized that instead of the usual 6% attrition rate for rescue personnel, the rate jumped to 40% after an airline disaster (Mitchell & Bray, 1990). Similar attrition rates were noted across disciplines (police, fire, paramedic, hospital) following other major incidents (multi-victim car crashes, multiple death by fire in apartments and nightclubs, train crashes, etc.).

When Mitchell developed his CISM model in response to these identified stressors, he adopted the following definitions. A *critical incident* is defined as “any situation faced by personnel which causes them to experience unusually strong emotional reactions, and which has the potential to interfere with the ability to function - either at the scene, or later”

(Mitchell, 1983, p. 37). *Critical incident stress*, as paraphrased from Mitchell (1983) is: the physical, emotional, cognitive, and behavioural reactions to a critical incident.

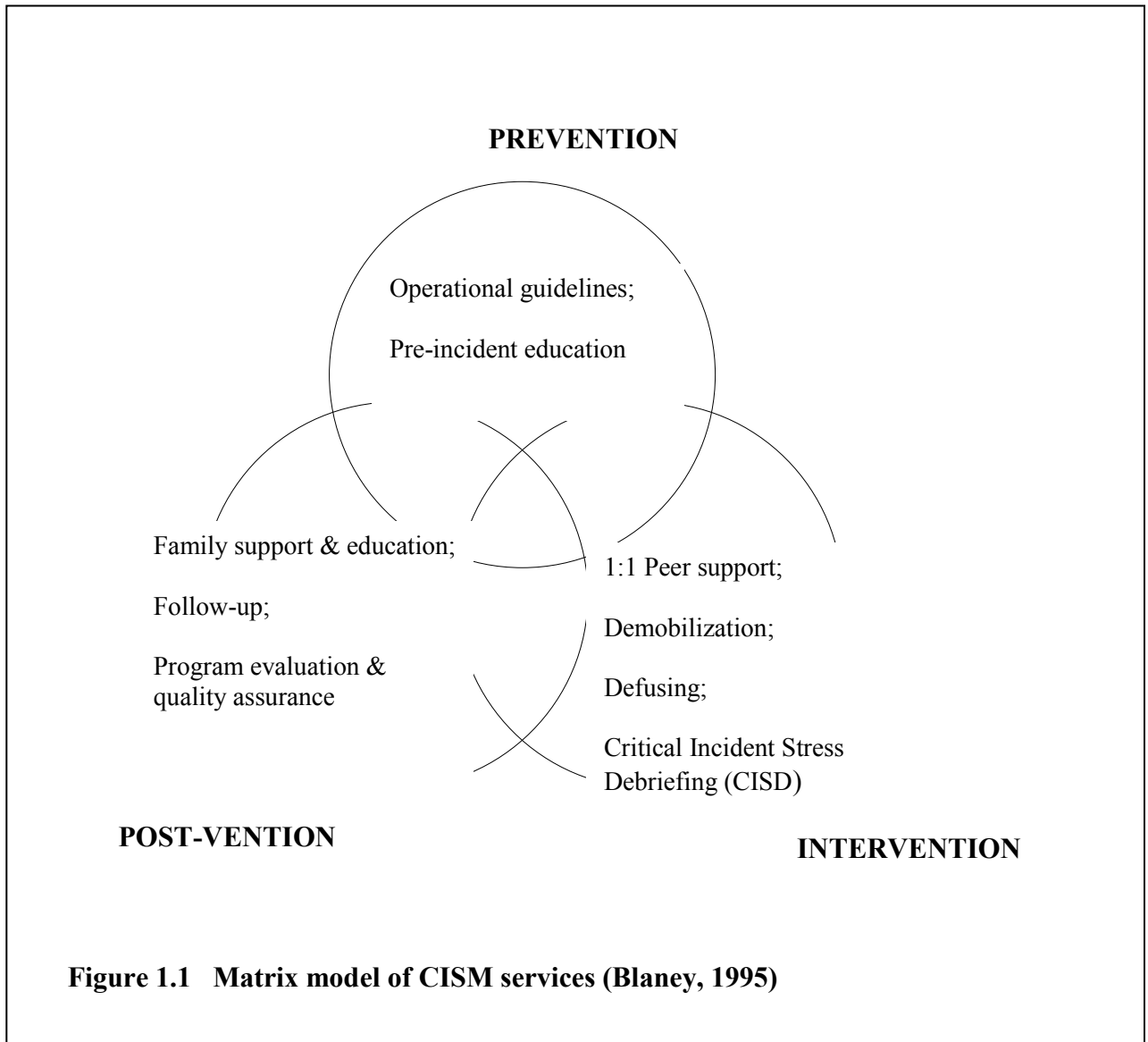
#### **1.5.4 The CISM model used in this study**

Because there is no overarching CISM ‘program’ in British Columbia, this project focuses on a single model of CISM service delivery, which is shared by the fire departments participating in the project. Three departments of varying size were chosen for the project: Surrey, Abbotsford, and Nanaimo. All have utilized the International Critical Incident Stress Foundation (ICISF), or ‘Mitchell’, model of CISM for approximately ten years. The key features of this model are its matrix of prevention, intervention, and post-vention services, its reliance on ‘peers’ (specially trained members from within each fire department) to lead the CISM program, and its underlying assumption that stress reactions in high-risk professions are normal and expected (Mitchell, 1983). These features also mirror the philosophies underpinning health promotion, empowerment, and community development strategies: health is seen as a resource, health is defined by the cohort or community, strategies to maintain health are defined by the cohort, and the individuals within the cohort are experts in their health. External ‘experts’ are used only as additional resources whose role and actions are defined by the cohort.

The services provided by the existing CISM model are inter-related, and may overlap. There is not a ‘continuum’ of service, but a client-defined ‘menu’ of services that may be utilized



independently, interdependently, and/or intra-dependently. Figure 1.1 depicts the services and inter-relationships.



As can be seen, there are multiple components to this CISM program; following is a brief overview of the goals and functions of each component (Blaney, 1995).

Within the 'prevention' frame, are the components of operational guidelines and pre-incident education. ***Operational guidelines*** are the organization's statements of governance of the program. They include a statement of organizational support or policy, and a series of procedures that provide direction on how to enact the policy. Goals and objectives of the service are developed, team structure is defined, and specific issues such as leadership, funding, training, and the program's relationship to the larger organization must be articulated prior to, or concurrent with, other aspects of the CISM program.

The goals of ***pre-incident education*** are, essentially, to raise awareness of critical incident stress in the department, and to begin dialogue about healthy coping strategies in high-risk professions. Pre-incident education is delivered by team members in formal and informal sessions: coffee room chats, posters, short awareness sessions during the formal orientation/training of new recruits, etc. Pre-incident education focuses on the common manifestations of stress, and critical incident stress, and the physical, emotional, cognitive, and behavioural reactions to stressors are discussed. As well, discussion of existing and new strategies to help mitigate the negative effects of stress is encouraged. One of the main functions of CISM teams is the ongoing education about : the general nature of stress, critical incidents, signs and symptoms of stress, survival strategies, the function and limitations of the critical incident stress teams, follow-up services, how to access professional therapy services, accessing the CISM team, etc.

Throughout the matrix of prevention, intervention, and post-vention services are the peer support personnel. This particular CISM model comprises two diverse, but interrelated groups of members who rely on each others' expertise when working with critical incident stress in the fire service. The groups of members are the *peer support personnel*, and the *mental health professionals*, and in this model, both components are essential for the

successful functioning of the CISM program.

Peer support is a vital component to CISM, and also in the prevention of cumulative stress. A peer's first hand knowledge of the operational end of the organization provides a credible link between the hierarchal levels in an organization, and a link for firefighters and the mental health professionals who guide the debriefing process and act as the referral sources for follow-up when needed. So, what is a peer support person?

**Peer support** interactions are learning situations in which firefighters listen to and help facilitate the learning of other firefighters. Peer support is a process in which peers listen and offer support and alternatives, but provide little or no advice. A peer support person is someone who cares about others and talks to them about their thoughts and feelings. Rather than being an advice-giver, or problem-solver, a peer support person is an active listener who uses communication skills to help others identify their stressors and make some decisions. They exist within the social network of the workplace. Their peer support sessions, therefore, are likely to be informal discussions, or conversations, which will have the added feature of skills specifically learned for helping others express and deal effectively with problems or concerns. There is a difference between these supportive conversations and the more common social conversations of the workplace. In social conversations, there is mutuality of expression of issues. In a supportive conversation, there is no mutuality; the focus is on the individual who is receiving support.

Working alongside the peers as equal members of the team, are the mental health professionals. In the ICISF model, CISM teams are peer-oriented crisis intervention programs that also rely on guidance and assistance from mental health professionals. The main function of CISM teams is to stabilize chaotic and highly stressful situations before the situations can cause damage; prevention, not treatment, is the name of the game.

Traditionally, mental health therapists have focused on treatment, so CISM represents a significant paradigm shift for many. The mental health professionals in CISM programs hold advanced degrees in a mental health field, and work as mental health service providers in one or more settings (such as hospitals, crisis centers, community mental health centers, or in private practice). Their educational background is in psychology, social work, clinical counselling, psychiatry, psychiatric nursing, or pastoral counselling. In order to be active in the three fire departments under study, the mental health professionals must, additionally, have specific training in: CISM, crisis intervention, general stress management, group processes, communication skills, post-traumatic stress disorder, and should be familiar with the environments that the peers are working in. One way of gaining familiarity is through "ride-alongs" with fire department personnel, where the mental health professional shadows one or more fire department members (firefighter, dispatch, fire investigation, command staff, etc) to observe first-hand the stressors faced in the workplace. CISM mental health professionals provide a number of services to the teams, including psychological leadership and guidance during debriefings. They provide consultation and clinical support to the peer support personnel on the team, and may help with education of the team members. They provide assistance in developing referral sources, and may assist with follow-up services in the CISM program.

Returning to the service matrix, also situated within the context of "intervention" is the small group *defusing*. Defusings allow for some initial ventilation of reactions to the event. The main purpose is to stabilize the working team so they can be returned to normal service, or allowed to go home with the stress from the event having been mitigated. This is accomplished through a short discussion that provides the opportunity for the initial identification and expression of emotional reactions to an event; as well, the discussion educates staff about normal stress reactions, and advises them of available support services. Defusings are a small group process, and unit personnel from the scene are brought together;

the sessions generally last 30-45 minutes. Defusings can be managed by experienced peer support personnel, but may be led by a professional support person.

Another intervention, and one that has been getting a lot of press over the past few years, is the *critical incident stress debriefing* (CISD). CISD has long been synonymous with CISM, but in fact, is only one of several interventions within the matrix of CISM services. The goals of the CISD are to decrease the impact of a critical event, and to “accelerate the normal recovery of normal people who are experiencing normal (but painful) reactions to abnormal events” (Mitchell, 1983, p. 37). This is a seven-step group process that guides participants through the psychological domains of cognition (thinking), affect (feeling), and back to cognition using a team of peers and a mental health professional. The debriefing process differs from the defusing not only in the team make-up, but in the structure and goals of the process. It provides participants with the opportunity, but not the expectation, to identify and ventilate feelings. The CISD also provides opportunities for stress education, emotional reassurance, and for anticipating potential signs and symptoms of delayed stress. The guided discussion assists participants to normalize stress reaction, and reduces the fallacy of abnormality and uniqueness (Mitchell, 1983). The debriefing takes place several days after the critical incident, and all of the emergency services personnel directly involved in the incident are invited to the debriefing. The process begins with a basic introduction to the process, participants, and CISM team members, then situates the participants in the critical incident by allowing them to briefly describe the facts of the event. The cognitive aspects transition into affect when participants are invited to describe their first thoughts at the incident, and what thoughts are still with them. Participants are then invited to move into affect by describing the ‘worst part’ about the incident for them personally, or to describe which part of the event is the most difficult for them. Affect begins to transition back to cognition when participants are asked about their signals of distress at, or following, the incident and ways their lives may be different now from before the incident. As well, they

are asked what strategies they have utilized in the past to deal with similar stress reactions. There is a discussion about potential delayed stress reactions, and stress-reduction strategies. Finally, there is a summary of stress reactions, coping strategies, and any action plans that have been developed. The debriefing process has been described in detail in various journals and books (Dyregov, 1997; Mitchell, 1983; Mitchell & Bray, 1990; Mitchell & Everly, 1997; Richards, 2001). The key features of debriefings are the combination of peers and mental health professionals guiding the process, and the *opportunity* for participants to discuss in some detail their stress reactions and coping strategies.

***Demobilizations*** are interventions that are used with military and paramilitary emergency service and rescue workers at disasters or large-scale events. Demobilizations are part of an overall education and support system established at the beginning of a comprehensive disaster response. The goal of the demobilization is to reduce the effects of working in stressful situations at the end of the shift, and to remind workers of some common stress-reduction strategies to use between the end of this shift and the beginning of the next.

Situated throughout the CISM matrix is the feature of ***family support and education***.

Support services for their loved ones immediately become a priority when firefighters face a critical incident, then have to go home to significant others. Those significant others may have to live with the unexpected stress reactions of their spouse, as well as their own vicarious trauma. Again this particular CISM model utilizes pre-incident education for families; as well there are interventions available for significant others following major events, such as line-of-duty deaths, and disasters. Those interventions may include debriefings, bereavement and grief support, and crisis counselling. Services include family support for children and elders - and an awareness of the differences in working with these populations.

Ensuring *follow-up services* (defined as any service provided to personnel subsequent to a CISM intervention) are available is another key component of the CISM model used in this study. Follow-up service may be provided by peer personnel, and takes the form of phone contact, 1:1 conversations, coffee talks, worksite visit, or rarely, home visit. Follow-up often takes the form of assisting with referrals to counselling services, helping contact the professional counsellor, accompanying the member to the initial counselling appointment, etc. Peers do not provide counselling services, but are often the liaison between the distressed member and the external counselling resource. The CISM team liaises with therapists who have an interest and training in CISM, such as the Employee and Family Assistance Program (EFAP) or mental health clinics.

Program evaluation and quality assurance processes are also key to the ongoing effectiveness of this CISM model. Evaluation and accountability mechanisms ensure evidence-based practice is maintained, and encourages appreciative inquiry into best practices.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 CISM within the context of early intervention**

CISM has its genesis in military psychiatry and civilian crisis intervention theory. Early intervention has been advocated and utilized by the military since the First World War. At that time, a PIES approach (proximity, immediacy, expectancy, and simplicity) was used: interventions were pragmatic and simple, offered near the field of operations as quickly as possible, with the expectation that the soldier would cope and return to his unit (Bloom, 1998; Ursano, Grieger, & McCarroll, 1996). Since then, civilian populations have benefited from similar early intervention processes (Aguilera, 1994; Raphael, Meldrum, & McFarlane, 1995). Caplan's work in preventative psychiatry (Caplan, 1964), and Aguilera's book on crisis intervention (Aguilera, 1994) provide excellent summaries of early intervention with civilian populations. Aguilera also differentiates between psychoanalysis, psychotherapy, and crisis intervention and suggests *psychological therapy* is defined as "a set of procedures for changing behaviours" (Aguilera, 1994, p. 16). She contrasts that by defining the goal of *crisis intervention* as stabilization of the immediate psychological crisis and restoration to the pre-crisis level of functioning. Dyregov (1997) confirms much of the psychological work is done in a single session. Crisis intervention enhances existing coping skills, and provides education/information about the biopsychosocial components of the stress response; the process fosters resilience in the here-&-now instead of expecting behaviour change. Mitchell's CISM program, and others who have developed or adapted post-incident support programs (Armstrong, O'Callahan, & Marmar, 1991; Armstrong, Lund, McWright, & Tichenor, 1995; Armstrong, et al., 1998; Bell, 1995; Dyregov, 1997; Snelgrove, 1999) also



subscribe to early intervention concepts. As well, Campfield and Hills (2001) found individual bank employees benefited from early post-robbery group debriefing. The National Institute of Mental Health (NIMH) recently (2002) published guidelines for early intervention following disaster and terrorist attacks. The benefit of early intervention, however, is contrasted by Avery et al.: "...venture a view the notion of intervention shortly after exposure to traumatic stressors may be misplaced" (Avery, King, Bretherton, & Omer, 1999, paragraph 19).

Ingram and Price (2001) posit a resiliency model of trauma response and suggest that psychopathology exists not from a single cause that can be maintained or treated, but from a "vulnerability" perspective" (p. 7) . They believe vulnerability is an enduring trait, and is endogenous, latent, and conceptually separate from but triggered by perceived stressful events - a "diathesis stress" model (Ingram & Price, 2001, p. 11). Vulnerability is opposed by resilience which "...suggests the opposite of vulnerability and implies a resistance to disorder but not an immunity." (Ingram & Price, p. 14). Ingram and Price suggest further research into "which vulnerability processes can be altered" (p. 245), and how resilience can be enhanced. They conclude by suggesting enhancing resilience through education, skill development, and crisis intervention following trigger events will decrease vulnerability. The idea of enhancing resilience is also found in other recent articles (McFarlane & Yehuda, 1996; Raphael, et al., 1996), and is a principle underlying CISM.

Flannery (1995) believes there are three psychological domains that contribute to physical and mental health: reasonable mastery, caring attachments, and a meaningful purpose in life.

When a critical or traumatic event occurs, these three domains become disrupted, and the usual cognitive and behavioural coping strategies may become maladaptive. Flannery (2001) suggests that crisis intervention processes, including CISM, assist in the restoration of the mastery, caring attachments, and meaningful purpose in life, hence fosters a return to the pre-incident level of functioning. He advocates the use of homogeneous groups (i.e. workgroups, colleagues) to assist with cognitive reframing and the re-establishment of social networks. Stephens (1997) found social support has a buffering effect on the impact of stress; group assistance is also advocated by other authors (Aguilera, 1994; Dyregov, 1997; Figley, 1989; Raphael, et al., 1996). Moran (1998), although advocating research on the effects of social support, adds a cautionary note to not lose sight of the individuals within the study of group processes.

The use of peers, paraprofessionals, and volunteers for early intervention is discussed by Aguilera (1994). A 'team' approach comprised of trained peers from the workplace and specially trained mental health professionals is advocated by a wide array of authors, including Flannery (1995, 2001), Hokanson & Wirth (2000), Hytten and Hasle (1989), Lindemann (1944), Mitchell (1983), Mitchell & Bray (1990), Moran (1998), Robinson & Mitchell (1993), Stephens (1997), and Young (1994). Van Devanter (1983) in her autobiography, as well as Walker (1985) and Marshall (1987) in their biographical accounts of those who served in Vietnam, make frequent reference to the benefit of 'rap groups', which in many cases are support groups led by trained peers.

The goals of CISM are to mitigate the effects of crisis in specific organizations and cultures through education and verbal ventilation (Mitchell & Everly, 1995). CISM relies on peer-led, clinician guided education and intervention, and builds on the assumed “normal”, time-limited crisis response and the resilience of those affected by traumatic events (Aguilera, 1994; Mitchell, 1983; Mitchell & Everly, 1997; Robinson & Mitchell, 1993). CISM utilizes a series of individual and group interventions, and requires the use of trained peers who understand the issues and personalities of the workplace. The CISM program overall, and some of the specific components, are guided by mental health professionals who respect the workers’ culture, and have specialty training in early intervention techniques. Treatment providers, though, remain resistant to the use of peers. Corneil (1993) describes in his doctoral thesis the unique social network of firefighters and the need for “peer facilitators” (Corneil, p. 239). However, an example of a study in which peers are not used is Shapiro & Kunkler’s study with hospital personnel following the Hillsborough football stadium disaster, which describes personnel’s access to ‘counselling’ through requests received by ‘psychologists’ (cited in Raphael, Wilson, Meldrum, & McFarlane, 1996). Neither counselling nor mental health professionals are cornerstones of a CISM program.

Common themes emerged in the literature, including a sense that reactions to critical incidents and traumatic events are, essentially, normal and expected. Crises are time-limited, and there is evidence that early, appropriate intervention will help to mitigate the effects of traumatic events. There is no consensus on the risk factors or predictors for who may be traumatized and who will be immune to long-term effects. There is no consensus on the use

of peers. As well, there is also no consensus on whether stress is traumatogenic, and no consensus on the differences between stress and trauma (Shalov, 1996).

Another theme in the literature review is the contention that CISM is ineffective, or even harmful. On the surface, the problem seems to be a lack of empirical evidence that clearly demonstrates efficacy of CISM. However, on closer inspection of the research to date, several issues quickly become evident. There are definitely paradigmatic disagreements - with some researchers demanding randomized, controlled studies (Gist & Woodall, 1995, 1998; Moran, 1998). Others are recommending evaluation research of specific models (Stephens, 1997). There are also personality conflicts, with authors referring to CISM as shamanism, and a good marketing strategy (Gist & Woodall, 1999). As well, there appear to be financial issues. Authors are referring to each other as entrepreneurs more interested in the bottom line than in psychological health, and others are promoting the concept that psychological disorders are manufactured by therapists for financial gain (Dineen, 2002). There are cultural and philosophical clashes around issues such as: pathology vs. normalcy (Everly, 1990; van der Kolk, 1996), vulnerability vs. resilience (Ingram & Price, 2001), and apparent misunderstandings of what are ecologically or contextually correct reactions within and between groups that have been previously studied (Basuttil, et al., 1995; Hobbs, Mayou, Harrison, & Worlock, 1996; Rose & Bisson, 1998; Rose, Bisson, & Wessely, 2001). There is an obvious lack of understanding of models, approaches, outcomes, and processes, and there appears to be little consistency between the models, approaches, and outcomes that have been researched to date. There is evidence that different models and different 'pieces'

of models have been studied (Deahl, Scinivasan, Jones, Neblett, & Jolly, 2001; Everly & Boyle, 1997; Everly & Lating, 1995; Mitchell & Everly, 1997; Robinson & Mitchell, 1993).

Without a doubt, the most widely debated component of the broader CISM paradigm is 'debriefing' (Gist & Woodall, 1999; Hamling, 1997; Raphael, Meldrum, & McFarlane, 1995). Debriefing is only one part of the 'management' of critical incident stress, yet has been touted as a 'one-off', shamanistic approach to be provided to individuals or groups mechanistically and without apparent assessment of need, to any population at any time following any trauma (Hobbs, Mayou, Harrison, & Worlock, 1996; Lee, Slade, & Lygo, 1996; Mayou, Ehlers, & Hobbs, 2000). The current state of research in CISM has some opponents arguing that there is not empirical evidence that CISM 'works' (Avery, King, Bretherton, & Omer, 1999; Bisson & Deahl, 1994, Gist et al., 1997; Rose & Bisson, 1998; Rose, Bisson & Wessely, 2001). There is, however, much evidence from the field that says it is effective (Beaton, Murphy, Johnson, Pike, & Corneil, 1998, 1999; Burns & Harm, 1993; Corneil & Kirwan, 1997; Everly & Boyle, 1997; Everly & Lating, 1995; Flannery, 1995, 2001; Hokanson & Wirth, 2000; Hytten & Hasle, 1989; Mitchell & Everly, 1997; Moran, 1998; Raphael, 1986; Richards, 2001; Stephens, 1997). As well, there are numerous calls for randomized, controlled studies (Basuttill et al, 1995; Bisson, Jenkins, Alexander, & Bannister, 1997; Kenardy, 1998, 2000). It is no wonder that organizations worldwide are questioning the usefulness of CISM.

## 2.2 Culture of the Fire Service

Critical incident stress management services were developed in the context of American emergency service culture with the intent of mitigating the impact of critical events in those services (Mitchell, 1983). Mitigation of impact is difficult to quantify (Deahl, Scinivasan, Jones, Neblett, & Jolly, 2001), as are the cultural constructs of the emergency services. Emergency services personnel are defined for the purposes of this study as police, fire, paramedic, hospital, and disaster workers. CISM is targeted toward paramilitary-style organizations where suppression and repression of reactions is the cultural norm (Beaton, Murphy, Johnson, Pike, & Corneil, 1998, 1999; Hokanson & Wirth, 2000), and the “attitude” (Parker, 1987, p. 178) is one of machismo, integrity, and community service. These professionals are considered to be at high risk of physical and psychological sequelae to their jobs because they routinely face risks and work in conditions that are “outside the usual realm of human endeavor” (Mitchell, 1983, p. 37); other authors report the unique worksite risks encountered by firefighters (Beaton et al, 1998; British Columbia Professional Firefighters Association, 1999; Corneil, 1993; Gist & Woodall, 1995; Hokanson & Wirth, 2000; Hytten & Hasle, 1989; Parker, 1987). The British Columbia Professional Firefighters’ Association reports a high number and a variety of occupational hazards faced by firefighters, including psychological stress (British Columbia Professional Firefighters Association, 1999). The Workers’ Compensation Board of British Columbia recognizes the psychological risks associated with firefighting and, under Occupational Health and Safety Regulations developed policy stating: “Written procedures must be established and followed by a fire department or industrial fire brigade to manage stress arising from an incident that is

likely to cause adverse health effect to fire fighters” [Workers Compensation Board of British Columbia, 2000, Part 31.5 (1)(c)]. Specific mention of the high risks of traumatic stress by firefighters is made by Corneil, Beaton, Murphy, Johnson, & Pike (1999) and Fullerton, McCarroll, Ursano, & Wright (cited in Ursano, Grieger, & McCarroll, 1996). Corneil also stated: “Firefighters experience similar stress levels as Vietnam veterans. They are as stressed out as any of the men who saw combat. The difference is, these guys go back through it over and over again...thirty to thirty-five years...” (as cited by de la Plante, 1993, p. 138). An unnamed firefighter is quoted as well by de la Plante:

...I can still smell the burning flesh...I was debriefed about my recent incident, all the extra baggage I was carrying around came to the surface. I had suppressed it. It still was there, hurting whenever my mind strayed or was triggered by something from the past. (p. 99)

Lewis, Tenzer, & Harrison (1999) describe some of the ethical issues faced by firefighters that contribute to their stress. A particularly stressful paradox for firefighters that is readily observable post-September 11, is the creation of the ‘hero’ using ‘hero mythology’ and the ‘hero epic’. Lewis et al. (1999) inquire into the impact of this imposed hero myth on average individuals, and note that the fire culture is one that supports individuals who take the risks of their job as matter-of-fact, and pride themselves on doing a great job everyday – not only during and immediately after disasters.

## 2.3 Summary of Literature Review

It was evident from the literature review that the outcomes measured to date are not representative of, nor relevant to, firefighters. Few of the studies are fully applicable to this particular group of emergency responders. The studies generally focus on pathologies, illness, and victimization, not on enhancing resilience as a reasonable and effective intervention for the majority of firefighters. Many studies to date have measured the morbidity of PTSD from the pathological response perspective, but few appear to have approached the issue of CISM from a *health promotion, preventative mental health, or resilience* perspective – subtle differences in wording from the illness-wellness model, but substantial difference in meaning. The debate over efficacy has polarized the field, and pitted empirical, or basic researchers who are concerned about possible harmful effects against those (such as service recipients) who prefer qualitative, or applied methods. There are charges and counter-charges about models, methods, outcomes, and evaluation of CISM services, and a general sense from many emergency service workers (for whom the concept was initially developed) of “who cares? – CISM works” (R. Scruton, personal communication, 1998).

The difficulty in demanding empirical studies that are randomized and controlled, is that these are complex human systems that are being researched, assessed, and treated which unfortunately cannot be randomized or controlled. Deahl, Scinivasan, Jones, Neblett, & Jolly (2001) suggest that a broader range of outcomes be researched because “Symptoms of PTSD...are not the only consequence of psychological trauma and should not be used as the



sole measure of outcome” (p. 529). Stephens (1997) recommends evaluation research, and Avery, King, Bretherton, & Omer (1999) suggests that support strategies be developed that take into account what survivors of traumatic events would value and utilized at various stages of post-incident adjustment. Ingram & Price (2001) when discussing research, say, “...new paradigms are needed for the more mature state” (Ingram & Price, p. 264) of the field, and “static, linear models must yield to more complex models involving transactions among variables.” (Ingram & Price, p. 264). The challenge now is to continue to integrate various approaches and begin to develop utilization-focused evaluations (Patton, 1997) of the new paradigms, methodologies, and models.

## **CHAPTER 3: CONDUCT OF RESEARCH STUDY**

“The basic issue is simple: how best to describe and interpret the experiences of other peoples and cultures” (Lincoln & Denzin, 1994, p. 577).

### **3.1 Research Methods**

In the field of traumatology, the accepted and recommended research paradigm has been quantitative. However, within the field, there are questions that cannot be addressed using purely quantitative paradigm, methodology, and methods. Deep divisions exist within the CISM field, resulting in an inductive-deductive dichotomy: CISM works/doesn't work; CISM prevents PTSD/causes harm; CISM is a therapeutic intervention best left to therapists/ CISM is not therapy but as a process has therapeutic effects. The paradigmatic debate has polarized the academics in the field. The firefighters, for whom the program was originally developed however, insist that they benefit from CISM, and their voices seem to have been lost in quantitative methodology. CISM is a peer-led model, and this research project needed to be designed to be congruent with, and true to, those same principles.

Researchers have utilized various paradigms and methodologies to examine effectiveness of CISM, with differing results that complement or contradict previous research findings.

Although there are some commonalities of practice, there is no agreement on the 'best' way to deliver CISM services, and the organizations that have been researched previously have mandates and models that are often quite diverse from one another. This diversity provides

for rich debate at a global level as attempts are made to establish ‘best practices’, but further complicates the research picture as ‘apples’ and ‘oranges’ are often researched. There have been different approaches to methods of sampling, data collection, and data analysis. For these reasons, a single CISM model (ICISF/Mitchell model) and a single cohort (firefighters) were chosen for this project.

### **3.1.1 Qualitative versus Quantitative**

As many researchers do (Palys, 1997) this researcher debated the significance of a deductive-quantitative or inductive-qualitative approach, and tried to decide which was more compelling. Utilizing “Wallace’s Wheel of Science” (Palys, p. 54), it was determined that both approaches “involve the continuous interplay of theory and data” (Palys, p. 54), and whether the theory or the data comes first is a non-issue – all researchers “are involved in an ongoing dialectic relationship involving both” (Palys, p. 47). In response, this research design is founded in grounded theory (the theory that emerges from research), but the project offers inductive (clarifying underlying processes) and deductive (offering alternative explanation) components: CISM is effective, not because it is a treatment on the illness-wellness continuum, but because it is a primary prevention strategy that empowers individuals, in the context of their workplace, to focus on their own and others’ health through education, communication, and enhanced social support.

The hypothesis was addressed through a grounded theory approach. Morse (1994) suggests “If the question concerns an experience and the phenomenon in question is a process, the method of choice for addressing the question is grounded theory” (p. 223). Grounded theory

is described as a systematic approach to the study of interactions to bridge the perceived gap between theory and research, and the consequent undervaluing of qualitative research (Glaser and Strauss, 1967; Glaser, 1992). In this method, theory remains closely tied to data through descriptive examples that provide direct empirical evidence that the theory fits the phenomenon under investigation; in other words, the firefighters will describe how CISM is effective for them.

### **3.1.2 Researching Sensitive Topics**

Sensitive topics are discussed by Derry & Baum (1994), Brewer (1993), and by Renzetti and Lee (1993) and can be identified as those issues which, when made overt, pose a threat to the individual or organization, or to the researcher or the data. As well, Armstrong (1996) reminds the trauma researcher of the possibility of contagion, denial, and arousal of trauma for participants and investigator. In researching CISM in fire departments, the culture, meanings, values, coping, and thinking of individuals are examined. As a paramilitary organization that has historically valued stoicism, and censures any sign of weakness, the fire service tends not to discuss reactions, feelings, or symptoms that may be considered negative or non-macho (Corneil, 1993; Beaton, Murphy, Johnson, Pike & Corneil, 1998). Hence, the intent to ask questions related to that which is not discussed constitutes a potential threat to individuals within the service if information perceived to be counter-culture is identified.

Three fire departments, for whom the identification and mitigation of negative stress reactions has become more of the norm since the CISM programs were operationalized, were deliberately chosen in order to minimize the impact of discussion of sensitive topics.

However, confidentiality did remain an explicit expectation of the participants. Accordingly, the participant consent form was lengthy and explicated voluntary participation,

confidentiality, and the storage of project information (Royal Roads University, 2000). As well, contingencies for possible contagion and arousal of trauma were explicated (Armstrong, 1996).

### **3.1.3 Standards for the quality of findings**

Quantitative and qualitative standards were employed. The traditional quantitative standards of reliability (the degree to which repeated observations of a phenomenon provides similar results), and validity (the degree to which the research measures what the researcher wants it to) were used, but there are limited templates for establishing standards for qualitative research. However, Rippon (2002) summarized criteria for qualitative standards as recommended by Miles & Huberman (1994): “namely: objectivity/confirmability; reliability/dependability/auditability; internal validity/credibility/authenticity; external validity/transferability/fitness; and, utilization/application/action orientation” (Rippon, p.39). As well, a research audit was carried out (per Huberman & Miles, p. 439) ensuring the following criteria were met:

- the findings are grounded in the data;
- inferences are logical;
- the category structure is appropriate;
- inquiry decisions are justified, as are the methodological choices;
- researcher bias is articulated – in this case as empathy for the participants, the data, and the CISM field. Other potential issues of bias such as premature closure, unexplained data, search for negative cases were reviewed and avoided;
- strategies employed for increasing credibility included: presentation of the findings to a mixed international conference audience of researchers and emergency service

providers, and dialogue with the audience about the study conduct and outcomes; collaboration with an advisory team made up of firefighters; and peer review and second readers.

Triangulation, hence confirmation of findings, was achieved through convergence among the researcher, the advisory team, and an independent researcher. As well, there was convergence among theories – outcomes from the research support information and practice in the field.

### **3.1.4 Sample**

Sampling was purposeful in order to provide concurring and confirming data, and to ensure saturation. The criteria for the sample were:

- a) Project participation would be available to all members of the department, including management and command structure, as well as all trades (suppression, prevention, dispatch, etc). This goes to questions about CISM awareness, service availability, and the nature of critical incidents.
- b) Each department is comprised of volunteer and career members. This goes to questions about age, years of experience, sense of organizational support, nature of critical incidents, and CISM awareness/availability of service.
- c) Each department serves urban and rural geographical areas. This goes to questions about nature and frequency of critical incidents.
- d) Each department has more than 100 members. This goes to anticipated low rate of return of the survey method (Palys, 1997), and the need for a representative sample.

- e) Each department has a CISM program that has existed for 5 or more years. This goes to levels of program awareness within departments, as well as ensures that there is a relatively homogeneous sample. As well, it was anticipated that there would be common understanding about CISM concepts and terminology.
- f) The existing CISM programs utilize a matrix of peer-driven services. Again, goes to homogeneity and ensures that the ‘model’ under study is the same within the sample. As well, the research focuses on health promotion which is a grassroots, community-led process; CISM is congruent with this philosophy.
- g) The departments must be geographically accessible to the researcher in order to facilitate introduction to organizations, on-site interviews and meetings, delivery and pick-up of questionnaires, etc. The researcher had originally hoped to have more of a national focus to the project, but access to out-of-province fire departments was problematic vis-à-vis time and money.

### **3.1.5 Participants**

Participants were members of three fire departments in British Columbia: Abbotsford, Nanaimo, and Surrey. Other departments in British Columbia were considered for inclusion, however, the selected departments met all the criteria outlined for participation in the research project.

## **3.2 Study Conduct**

### **3.2.1 Research design**

The paradox in choosing a research paradigm and methodology was in the need to give voice to firefighters as well as their stated wish to contribute to the project but not in a “touchy-feely” way and “no focus groups”, and the investigator’s wish to utilize a systematic and scholarly framework for research. The firefighters requested anonymity, and suggested surveys and interviews, more of a quantitative approach. The principle investigator hoped to provide a learning opportunity about health promotion, and alternative research paradigms, as well as hear the “qualitative and critical conversation” (Miller & Crabtree, 1994, p. 340) without overtly challenging the existing hierarchy. Miller and Crabtree further state:

Qualitative clinical research is convincing if the methods are appropriate for the question and the investigator’s relationships with informants, data, and audience are clearly addressed; and if the audience recognizes itself in the findings; and if the question and results matter to clinical participants (p. 349).

Success of the project, as well as choice of paradigm and methodology required the participation of firefighters in all aspects of study design and delivery, as well as in the interpretation and validation of data. Therefore, the input of an ‘advisory team’ of firefighters was relied upon to ensure study relevancy and relationship to the fire service.

The research paradigm for this project is a quasi-experimental process; the methods are survey/questionnaires and interviews. Palys (1997) describes quasi-experimental as an



approach in which the logic underlying the traditional laboratory is adapted for field work, and where the researcher does not have complete control over all aspects of the situation. Rival plausible explanations of control are achieved not by traditional manipulative control, but through analytic control where the researcher tries to make sense of the existing situation by analysis of patterns.

Carper (1978) describes four “patterns of knowing”: empirics, aesthetics (art), ethics (moral obligations/right-&-wrong), and personal knowledge (inner experience/intuition); multiple patterns of knowing combine to form essential knowledge. Empirics or science is the traditional paradigm for knowledge development; however, knowledge creation is not the sole domain of science, and it is imperative to give voice to other ways of knowing.

According to Carper, the foundation for integration of all patterns of knowing is aesthetics. However, the fire service is traditional and hierarchal in its structure and function, and values traditional (scientific) approaches; to use a methodology that has no current meaning within the field, and in which participants could not recognize themselves would be, as noted by Miller and Crabtree (1994) ‘inappropriate’. Miller and Crabtree do caution that “research is currently dominated by positivism and patriarchal bias” (p.340), so this project provides an opportunity to utilize “other ways of knowing” (Carper, p. 253) within a quasi-experimental framework. It was intended to satisfy the traditionalists in the fire service and the positivists in the field, who look for empirical outcomes. It gave voice to the firefighters, and remained congruent with the original intent of CISM: a peer-led, clinician-guided matrix that focuses on normalcy and enhances resilience.

Overall, research *design* connects theoretical paradigms to strategies of inquiry and methods for collecting measurable material, or provides a “game plan” (Palys, 1997, p. 77). This study design needed to *represent* the voices of participants; the means for attaining representation was through the distribution of the surveys to all members of the three departments: fire command, dispatch, and fire prevention staff, as well as the fire suppression personnel. The other issue of representation – “legitimation” (Denzin & Lincoln, 1994, p. 14), or *what gives me the authority to design and conduct this research* – was provided by personal experience and credibility in the field of trauma response, and experience in working with various fire departments in British Columbia. As well, the project sponsor (Nanaimo Fire Rescue) and the advisory team advocated for and supported the project, and the researcher’s presence in the fire halls, with members and management.

Authority to conduct the research was granted from each department in writing, following a letter of introduction from the researcher. Electronic mail and internal memos to department leaders and members from members of the Advisory team provided additional support to the project and credibility for the researcher. There were face-to-face meetings with two of the departments’ Deputy Chiefs.

### **3.2.2 Data gathering**

The tools utilized in this project were survey/questionnaire, and unstructured interviews. A questionnaire was designed incorporating quantitative (closed questions, Likert scales) and qualitative (open-ended questions requiring narrative replies) techniques. Questionnaires were not limited to just the data, but did “...consider and account for the perspectives that

underlie those data...” (Palys, 1997, p. 398). There was also an underlying consideration for balance of the personal interest of the researcher for completion of a meaningful project, and respect for the organizational traditions of the fire service through ongoing consultation with the advisory team throughout the research process.

Surveys were drafted using principles of survey design described by Palys (1997), Creative Research Systems (2002), and Trochim (2002). The survey is attached as Appendix B. Consideration was given, in the questionnaire’s design, to such issues as: situational thresholds – the intent was to situate the participant in the last critical incident, not in the cumulative work or home stressors; and, the availability of alternatives – explicating the participants’ perspectives by asking for explanation of how they know they felt better, or why/why not did they attend an intervention. As well, the questions attempt to avoid normative or prescribed answers; inquiries, hence answers and options are left as open as possible in an attempt to derive the various personal perspectives from the data. The more times, and the more different ways questions are asked, the more reliable will be the characterization of the person and responses. For example, questions 9/10, 12/13/14, and 15/16 are variations of the same question: what works and how do you know? The questions were asked in different ways, but essentially the intent was to have the participants articulate their experiences in a variety of ways in order to demonstrate reliability and validity.

Consideration was given to the limitations of survey/questionnaires, particularly relating to perceived bias and limitations of self-report. This project is utilization-focused, therefore

needs to respect the current cultural context under study – in this case, a population who requested anonymity and stated their opposition to focus groups. The meaning of self-reports has been questioned (Palys, 1997), because they are perceptual reports; however, perceptions and here-and-now reports are valid in qualitative research. As well, a self-report technique fits with the model of CISM – a sense of self-knowing about stress, stressors, and personal coping patterns.

After criteria for participation were developed, and concurrent with the granting of authority to participate in the project, the Advisory team was formalized. This team comprises members of all 3 departments, as well as the coordinator of the departments' CISM teams. Within this same time period, in order to meet the academic requirements of Royal Roads University, a project supervisor and a project sponsor were invited to be part of the team. The project sponsor was recruited from the participating departments; Nanaimo Fire-Rescue agreed to fill the role. The project supervisor is the academic advisor, who also has extensive experience in research and in CISM/trauma response.

A draft of the survey was piloted by the Advisory team, other fire personnel, and non-fire personnel to assess for ambiguity, 'double-barrelled items' (Palys, 1997), and any other potential difficulties in wording of questions or responses. Meetings were held prior to piloting, then again prior to distribution, with members of the advisory team to discuss such issues as: survey design and analysis, how to encourage participation without biasing or hounding the firefighters, data entry, data analysis, etc.

In consultation with the advisory team, 820 questionnaires were prepared. The rationale for the large sample size was the expected low rate of return for questionnaires (Palys, 1997). Surveys were provided to all members of the departments. Participation in the project was voluntary; this was explicated on the consent. A sample consent form is attached as Appendix A.

The surveys, with consents and return envelopes attached, were then counted and placed into large envelopes addressed to the individual fire halls within each department. The large envelopes were distributed to each hall through the internal mail systems in the departments.

The turn-around time was about 3 weeks, in order to accommodate the varying shift and vacation patterns of personnel; the expected return date was listed on the bottom of the survey, along with the name of the department contact person. As well, the contact information for the principle researcher (telephone and email) was provided. There had been discussion with the Advisory team about the feasibility of the researcher using self-addressed, stamped envelopes and having the responses returned directly via post in order to ensure confidentiality. However, it was decided that confidentiality could be ensured by providing a sealable envelope that the respondent could put in the internal mail to go to a central collection person within each department. The outside of each envelope was addressed as “Leigh Blaney- Principle investigator - CISM research: Return survey, in sealed envelope, through the department mail system to: *name of department contact person, hall number, and street address.*” Each department contributed significantly to the project

simply by allowing the use of the internal mail systems; the cost-savings to the principle investigator was substantial.

### **3.2.3 Data analysis**

Of the 820 questionnaires delivered, 721 were returned. One-half (345) were returned blank, with the consents and return envelopes still attached to the questionnaires. It also appeared that 4 of the large envelopes had not been opened, leaving 86 questionnaires from those halls untouched; all were volunteer halls from 2 of the 3 participating departments. In fact, an overall lower rate of return was observed from volunteer halls. As well, two members from one department reported, on condition of anonymity, that a low rate of return was to be anticipated because “the career guys won’t participate in anything the volunteers are part of”. In contrast, it is noted that in the returns from that department, all but one of the responses indicated the participant is career service. Ultimately, 375 questionnaires were returned with useable data, a 45% return rate.

Upon retrieval of the questionnaires, the sealed envelopes were opened by the principle researcher. Analysis was conducted in two stages: questions 1-8, 11a, 11b, 12, and 14 were coded and entered into SPSS; SPSS (Statistical Package for the Social Sciences) is a software package for data analysis.

Questions 9, 10, 11c, 15, 16, 17, and 18 required narrative replies. These were transcribed verbatim onto a wall chart until saturation for each was reached. Morse (1994) suggests indicators of saturation include repetition of the information and confirmation of previously

obtained information. The responses were roughly themed, and a running tally was kept of subsequent replies as they were assigned to a theme or category within each question. A framework described by Huberman and Miles (1994) that includes 13 factors (such as noting patterns and themes, clustering, etc.) for consideration in data analysis was utilized. Themes were generally self-evident, as were outlier or negative cases, commensurate with a grounded theory approach (Glaser, 1992). The themes were validated with the Advisory team, and with an independent researcher. The themes were combined with information from the literature and integrated into recommendations that answered the research question. As well, the recommendations were presented to the advisory team who provided additional validation by functioning as a quasi-focus group, providing more data through discussion of themes and recommendations. Advisory team meetings were unstructured other than to reflect the intent of the particular meeting; for example, input for survey wording, or providing interpretations and feedback about the research recommendations. Notes were taken by the principle investigator for incorporation into the final report (Altheide & Johnson, 1994). As well, the study and its preliminary findings were presented at an international trauma conference (Blaney, 2003). The question-and-answer period towards the end of the presentation showed that themes and outcomes described by the project are congruent with firefighter and emergency services themes in Canada, United States, United Kingdom (Britain), Germany, and Australia.

## **CHAPTER 4: RESEARCH STUDY RESULTS**

### **4.1 Study findings**

The participants provided rich description and interpretation of their lived experience in “what works” and “how do we know”. The quantitative results provide validity to the qualitative outcomes, and will be described first in order to lay the foundation for discussion of the main themes that showed themselves in the firefighters’ responses.

#### **4.1.1 Quantitative results**

Using SPSS, data was analyzed for statistical significance using correlations and reliability analysis, such as Cronbach’s Alpha and paired t-tests. Some of the tables are included for reference to help situate the reader. However, it is the qualitative data that drives this project, and quantitative analysis was done to provide empirical validation for the qualitative evidence.

##### **4.1.1a Gender**

Although the sample size was large (n=375), there were only 23 responses from women. Although this reflects the proportion of women to men in the fire service, this number is too small to be statistically significant, and caution must be used when making inferences that are gender-based.



### 4.1.1b Age/years of service

As expected, there is correlation between age and years of service: the older the participant, the longer their years of service. This finding is represented in Table 4.1

**Table 4.1 Correlations between age and years of service**

		Age	Years of Service
Age	Pearson Correlation	1.000	.715
	Sig. (2-tailed)		.000
	N	372	372
Years of Service	Pearson Correlation	.715	1.000
	Sig. (2- tailed)	.000	
	N	372	375

**\*\* Correlation is significant at the 0.01 level (2-tailed)**

A means analysis shows Abbotsford Fire members are slightly older and have more years of service on average than the other departments, indicating that Abbotsford is a more senior department (Table 4.2).

**Table 4.2 Comparison of Age/Years of Service by Department**

<b>Department</b>		<b>Age</b>	<b>Years of Service</b>
<b>Surrey</b>	Mean	2.6887	3.6869
	N	212	214
	Std. Deviation	.9273	1.7842
<b>Abbotsford</b>	Mean	3.0000	4.1395
	N	43	43
	Std. Deviation	.8165	1.6985
<b>Nanaimo</b>	Mean	2.6724	3.2051
	N	116	117
	Std. Deviation	.8421	1.5511
<b>Total</b>	Mean	2.7197	3.5882
	N	371	374
	Std. Deviation	.8927	1.7255

Abbotsford also has more members indicating awareness of the program, and attendance at interventions. It is not possible, however, to correlate the age/years of service to attendance at the CISM intervention (question 11a, 11b) because some of the halls mandated their members to attend interventions. Naturally, this skews correlation and statistical significance.

#### **4.1.1c Career vs. Volunteer service**

More career members responded to the survey than volunteer members. The volunteer firefighters reported they were less informed about whether their department has a CISM program and were unaware of CISM in-service/awareness sessions, and reported higher proportion of members who had “never” experienced a critical incident.

#### **4.1.1d Peer support**

The issue of peer support does not correlate to other factors in the survey so cannot be measured statistically. As well, because some of the fire halls that use peer support personnel have mandated interventions following incidents, the statistics related to peer support are skewed. However, when looking at peer support as a process, members report the outcome of peer support is that they feel better; hence there is a positive qualitative correlation.

#### **4.1.1e Time line and nature of the critical incident**

As expected, there was a difference between the career and volunteer members’ reports of the nature of the critical incident with more volunteers reporting they had never experienced a critical incident. This difference is statistically significant. More volunteers are younger in age and less experienced, with more indicating they had less than a year on the job. It is expected that the longer one is on the job, the more calls hence the more critical events will be experienced. This is an expected finding given the increased volume of career calls.

As well, the nature of the critical incident varied between career and volunteer, and between experienced members. The career firefighters more often reported “death of a child” and “gruesome scene” as critical events, whereas the volunteer and less experienced career members more frequently reported “on-scene fatality” as a critical event.

#### **4.1.1f Type of intervention provided**

No inference can be made about the type of intervention provided because some of the halls mandate attendance. As well, there appears to be some confusion about the definitions of the various interventions, with several terms being used interchangeably. Also, many respondents chose more than one intervention, indicating they had received 1:1 peer support, defusing, and debriefing. In the absence of a clear definition of terms, and instruction to choose only one response, the results are skewed. However, there is significance in that some form of intervention was provided.

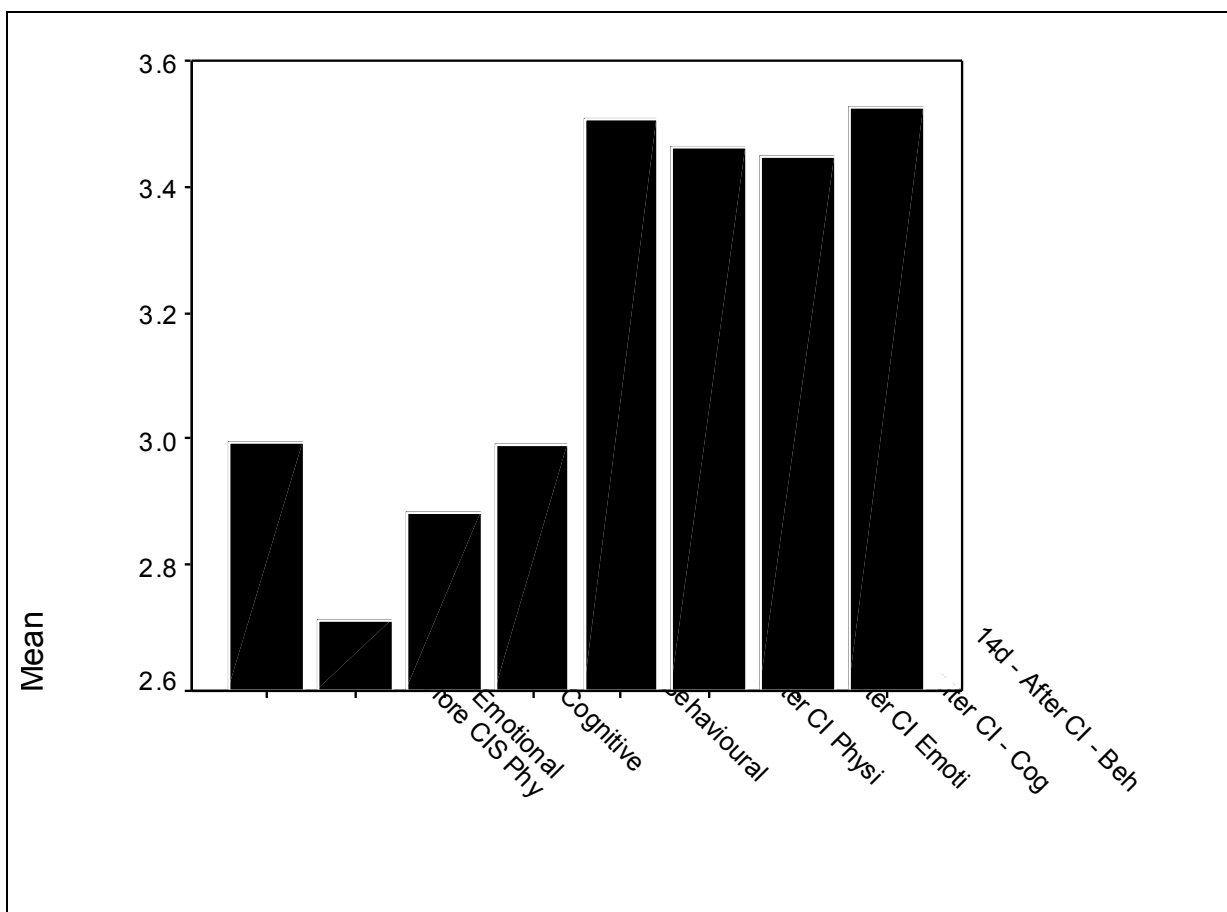
#### **4.1.1g Other factors**

Other than what has been commented on in relation to other factors, there is little to report on awareness of CISM programs in the individual departments, an awareness of in-service or updates about the program within the department (questions 5a and 5b), whether an intervention was provided, and whether the member attended the intervention (question 11a and 11b). Again, because some halls mandated attendance at some form of intervention for some or all of the crew, these factors will be statistically skewed.

#### 4.1.1h Reports of levels of distress before and after interventions

Analysis of the responses to Question 12 (levels of distress - physical, emotional, cognitive, and behavioural - before an intervention), and Question 14 (levels of distress following a CISM intervention) indicates a decrease in the levels of distress that is statistically significant. For question 12, in 357 cases, high reliability (.972) is shown between symptoms. In question 14, using 353 responses, high reliability (.991) between symptoms is again demonstrated. The hypothesis that CISM works is supported by the decrease in symptoms after intervention (Table 4.3).

**Table 4.3 Reported levels of distress before and after CISM intervention.**



### 4.1.2 Qualitative results

Researchers “make a case for the meaning derived from data and the rationale underlying” it (Palys, 1997, p. 397).

There was rich data provided in the narrative responses of firefighters. The quality and quantity of responses demonstrated the time spent articulating thoughts and feelings, and greatly enriched the meaning of the data. Themes were quickly self-evident in the data analysis process, and provided natural and sequential categorization.

#### 4.1.2. a Impact of critical incidents

Common themes emerged from various “sets” of questions. The questions that asked about reactions to stressful events, or symptoms that the participant experienced subsequent to a critical incident fell into four response categories: physical, emotional, cognitive, and behavioural. These response categories were explicated in Questions 9, 13 & 14, but many respondents articulated more specific aspects of each category. As well, respondents wrote about the *spiritual* aspects of the reactions (27): “looked for some meaning for this”, “thought about God or whoever”, “thought about death/dying/life”, “life is short/live every moment/cherish every moment”, “self-evaluating”, “thought about the victims/survivors/family members”.

Respondents identified *physical* symptom clusters, such as gastrointestinal upset (33): “upset stomach”, “threw up”, “nausea”, “disrupted eating pattern”; and sleep disturbance (21):

“disrupted sleep”, “bad dreams” and “nightmares”. Many more, however, described a wide variety of *emotional* reactions (150): “overwhelmed”, “anxiety”, “burst into tears”, “felt like crying”, “irritable”, “mad”, “frustrated”, “pissed off”, “sadness”, “sorrow”, “grief”, “vulnerable – it could have been me”, “fear”, “revulsion”, “anxiety”, “guilt”, “emotionally numb”, “withdrawn, didn’t want to talk to anybody”, “edgy”, “confused”, “depressed”. The *cognitive* (thinking) symptoms (56) expressed included: “worried about my crew/colleagues/team”, “couldn’t stop thinking about it”, “kept reliving it over and over”, “couldn’t concentrate”, “poor memory”, “self-doubt”, “thought about death”. The *behavioural* aspects (27) of reactions were articulated by: “didn’t want to handle the bodies”, “didn’t want to go back to work”, “talked to my family about seatbelts/fire plan”. Twelve respondents reported “no reaction” to critical incidents experienced in the last year or 2-4 years. One participant described “the cumulative effect of many stressors over the years being triggered by this one”. Two participants articulated the negative effect the media coverage of the event had on them: “I felt worse after ‘getting to know’ the victims through the media coverage”, and “I was so pissed off at the media for distorting what happened – that was the worst part for me”.

#### **4.1.2.b Strategies that help after a critical incident**

Several themes emerged from question 15: *After you experience a critical incident, what helps you the most? How do you know it helps?* The themes were grouped into three categories: social support, personal coping, meaning-making.

#### **4.1.2. b.i      *Social support***

By far, the largest category of activities perceived to be helpful following a critical event was *social support*. In this category, verbal ventilation ranked highest, with over 250 respondents saying “talking about it” was the most helpful. That category was further broken down into “talking to colleagues/coworkers/peers” (197), and “talking to spouse/family/friends” (132). Several respondents mentioned the need for family/spousal education about firefighter stress “so they know what to expect and what to do if I have a critical incident”. Forty-seven other respondents cited: “defusing”, “debriefing”, “the CIRT/CISM team”, “talking to caring people” as helpful. Respondents described themselves as “felt better”, “situation resolved”, “symptoms went away”, “able to carry on/get back to routine/get back to work”, “no residual effects/felt less effects”, “able to sleep/eat/exercise”, “got over it faster” as measures of helpfulness. Organizational support was also cited indirectly as helpful following a critical incident through the activation and utilization of the existing CISM program: “mandatory debriefings”, “I wouldn’t have gone unless it was mandatory” (13), “I only went to support the/my crew...but felt better” (9), use of “counsellor/mental health/employee assistance program” (5) on referral from the peer support personnel. The use of social support in a health context is borne out by other authors. Brewer (1993) describes peer support not as a treatment model, but as a self-efficacy model. Corneil (1993) found that vulnerability decreased with social support exposures, and that social support plays a role in restoring locus of control (described as autonomy, role clarity, and role involvement).



#### **4.1.2.b.ii**     *Personal coping*

Personal coping strategies were defined as “exercise/worked out/went to gym/went running/lifted weights”, etc. (64). Other personal coping strategies included: “laughter/crude humour/jokes” (12), “journaling” or “writing stuff down, even reports”, “my CISM training” and other forms of training and reflective experience.

Corneil (1993) found firefighters use specific modification strategies as coping mechanisms: modify the situation, modify the meaning of the event, and/or modify the reaction to the event. Firefighters in this study saw their reactions as normal, and that the nature of the event, not their character or individual circumstances mediated the reactions; this reiterates Corneil’s findings . “I went right back out on another call”, “I knew we did the best we could”, “didn’t dwell on it”, “strong beliefs about my job and where I fit” were all cited as strategies that worked.

Two respondents stated that they coped by “getting drunk” and “more beers”; they reiterated this chosen coping strategy later in the questionnaire when both answered the question about “what works?” by responding: “Booze”.

#### **4.1.2.b.iii**     *Meaning making*

Meaning-making included: “realized I did the best I could” (11), “it wasn’t my fault” (4), and some very spiritual content: “got spiritual/sought God/I have a strong faith/belief in God/prayed/prayer” (33). Also included within the concept of meaning making was some overlap with the themes of social support and personal coping: “I went home and hugged my kids”, “We reviewed our household fire plan”, “I had the seatbelts in the car checked, and I

make sure everyone has theirs fastened”. Other aspects of meaning-making were described as: “I am so thankful for what I have”, “made me respect my crew even more”, “the victim didn’t die alone – even if I couldn’t save them, I was there”. These concepts fit with Flannery’s assertion that restoration of the domains that are disrupted by trauma is key to psychological health.

#### **4.1.2.c Strategies that are least helpful after a critical incident**

Again, there were natural themes that arose from the replies to question 16: *what is least helpful after a critical incident, and how do you know?* Respondents generally said that “not talking about it” was the least helpful. Variations on this theme were articulated as: “trying to forget”, “bottling it up”, “going right back out on a call”, and “doing nothing”. They responded that they knew those strategies are not helpful because they continued to experience “anxiety”, “restlessness”, “felt sluggish”, “didn’t sleep”, “couldn’t eat”, “couldn’t stop reliving it”, and found “it takes longer to feel better”, “feelings/thoughts stayed bottled up...come out later”.

Another theme that emerged from the data about least helpful strategies was distinctly anti-mental health/professional in nature. This was evidenced from over 35 respondents who commented that “mental health professionals”, “mental health firefighter wannabe’s”, “professionals with no experience on the job”, “head-shrinkers”, “psycho docs” and being “therapized”, “psychoanalyzed”, “told the right way and wrong way to feel” “being told by a mental health to look for something positive in a positively gruesome scene” were counter-productive after critical incidents. “I felt worse” was an outcome mentioned in conjunction

with negative comments about mental health professionals; “debriefing with peers not with hired pros” was a suggestion.

Other strategies that were not helpful after an incident were: “being given a pat on the back” and “purposeless/ongoing/circular discussions about it”. Several participants commented that the “2 day/3 day/1 week wait for CISM” was not helpful. A number of respondents mentioned “poor management-employee relations” and “hall politics” as cumulative stressors that contributed to their critical incident stress reactions.

Three participants said that CISM was not helpful; two of the three said it was the least helpful thing for them, but they did not articulate what is helpful.

#### **4.1.2.d Personal attributes that help with coping**

There were a wide array of responses to question 17 which asked about personal attributes that help the individual cope with stressful events, and these essentially self-themed into physical, emotional, cognitive, and spiritual attributes.

Physically, respondents described their exercise regimens and the need to mobilize after an incident, their dietary patterns and the need to monitor those after traumatic events, “taking care” of oneself, avoiding drugs and alcohol, and getting rest whenever it is possible while recognizing that sleep may be disrupted for a period of time. Many talked about “a healthy lifestyle” and the need to maintain this lifestyle not only subsequent to critical incidents; diet,

exercise, sleep, relaxation techniques, and a “balanced lifestyle” were obviously seen as positive and necessary coping strategies.

Emotionally, many respondents described “laughter”, “a sense of humour”, “an ascerbic wit”, and various other references to humour and laughter as essential to their emotional well-being. Many spoke, as well, of the necessity for a “support network” of friends, co-workers, family to help balance the emotional toll of critical incidents in the form of “good home life”, “supportive spouse/friends/family”, “love/respect/appreciation for others”, and “someone I can talk to who keeps me grounded”. Having a high tolerance for stress, a strong will, calm nature, cool head, and being “stable” and a “realist” are cited as necessary attributes for dealing with stress.

Cognitively, respondents found that self-confidence, “feeling good about myself”, “don’t personalize”, logical, open-minded, knowledgeable and able to learn from situations are helpful. As well, attributes such as “cool head”, “don’t get squeamish”, “going on autopilot” and “putting things in perspective” are critical to managing the unusual events faced in the fire service. Also, training and experience were cited as invaluable tools for dealing with stress.

Spiritually, a belief in God, prayer, faith, “personal beliefs”, and the sense that “I am not alone” were cited as personal attributes to aid coping. Also, strong morals/character/values, “a sense of right and wrong”, and empathy for others were seen as very useful.

It is apparent that personal coping strategies are tied closely into the themes of “what works” after a critical incident. These issues lend credence to the argument that a self-efficacy and health promotion approach to occupational stress will be, not only accepted by firefighters, but internalized more easily and able to be utilized in times of chaos.

#### **4.1.2.e Other comments about CISM**

There was unexpected richness in the data obtained from the somewhat innocuous request for *other comments about CISM*. Respondents wrote long stories outlining their experiences with CISM, they scribbled in the margins, and they added extra pages of responses.

Invariably, participants’ comments and stories were supportive of the CISM programs and they articulated very positive experiences and outcomes from some very disturbing events. In support of the programs for example, participants said: “Great program”, “good program – this is the best”, “I know what it was like without CISM”, “the program must be continued”, “It works – people need to talk”, “any time it’s needed, it’s there – no problem”, “I’ve never seen a negative effect”. Others described “a great forum for listening, talking, venting using a process”, “pre-incident education is a must”, and “an important tool for emergency service personnel”. Several respondents described team-building and organizational support as important outcomes of the CISM process. Many commented that even if it is not necessary at that particular time for them, “it helps others for me to be there”, and “I might need it next time”.

Some who have not had experience with the CISM program also offered opinion: “it MUST be made available to all personnel, not just firefighters”, “I’ve heard great things about this

program”, “I hope I never need to call them”, “it’s good to know they are there and that they care”, and “I’ve never experienced a ‘big enough one’ to feel the full effect”.

There were 13 responses from volunteers, fire prevention officers, and dispatchers who said they did not have access to the CISM program. They were articulate in their disappointment at the lack of services, and very clear in their expectations that the program be available to all members of the departments; some stated CISM training must be made available for volunteers, as well as career members.

One respondent said they “disagree” with CISM, and one respondent said CISM is “ineffective – time would be better spent on other pursuits”. Two respondents said it is “waste of time” and offered “humour” and “time” as alternatives to CISM.

## **4.2 Study Conclusions**

The hypothesis that CISM works was supported by the data, both quantitatively and qualitatively.

Predictive validity was established from the returned surveys with a confidence level of 95% (+/- 5); the sample represents the population of the three departments. External validity was established from the sample to all firefighters in British Columbia; this is based on sample size in relation to total number of firefighters in the province, and on the sample’s representation of the culture of firefighters in British Columbia.

Strategies and explanations for effective CISM programs were identified by participants.

Firefighters are able to identify “what works” and able to describe the outcomes they expect (social support, personal coping, and meaning making “works” to decrease levels of distress; “I feel better” is the outcome).

Firefighter perceptions of effective CISM programs differ somewhat from existing data and recommendations about early intervention. Contrasts identified by this project include the firefighters’ ability to define their cultural and contextual considerations of health, yet the prevailing thinking that “professional” and “mental health programs” must be part of early intervention. The solution offered by this data is an integrated, yet peer-driven, matrix of services that utilizes a health promotion perspective and does not medicalize or pathologize ecologically correct reactions.

Firefighters also say that multiple components of CISM, including family education and support, peer support, defusings, and debriefings are effective in mitigating the effects of workplace stress. The outcomes expected from effective CISM programs are a decrease in self-described levels of distress. Firefighters value peer support, family support, exercise, spirituality, health and wellness. Firefighters also value empowerment and ... firefighters do not want to be “diagnosed”, “treated”, or “fixed”.

There is overwhelming support for CISM within the fire service from those who are aware of the program. There are communications, and perhaps cultural, issues that disempowered

member-groups within the fire service from accessing the CISM program: management and command staff, volunteers, fire prevention and dispatch staff for example.

To be successful, the program must be peer-led. There is overwhelming evidence that mental health clinicians are viewed as cultural outsiders, and can become part of the culture only when they have ‘lived’ the fire service experience. Clinicians can be invited into the culture, but remain observers and consultants until trust and credibility are established. Generally, peers serve as the access point to the fire service, and also serve to, initially, reassure members of the outsider’s credibility.

### **4.3 Study Recommendations**

“It is the paradoxical awareness that human lives can be constituted as much around their destruction as around their reconstruction, and ... the tragedies...can be counterbalanced by the often remarkable solutions people themselves create...” (Nordstrom & Antonius, 1995, p.14).

Knowledge is created in lived experience and in the reflection on that lived experience. To date, research in CISM has focused on the curative intervention model, and on measuring disease outcomes. This project frames research outcomes in the same way CISM programs are delivered: focusing on health, resilience, and empowerment from the perspective of those who live the experience – the firefighters.

The recommendations defined in this study by the firefighters are:



1. CISM programs must continue. This recommendation is evidenced by the overwhelmingly positive comments from service recipients, the effectiveness of the program in enhancing health strategies that decrease symptoms of distress, and the recognition of the benefit of social support.
2. Peer support is a critical piece of CISM program, and essential to program sustainability. Firefighters were very clear that they value peers because they understand the culture of the fire service, and because they are credible information providers.
3. In order to ensure access to key components of the program, the following targets are necessary:
  - enhanced pre-incident education and awareness programs for all members, including command staff, all trades (prevention, dispatch, suppression, etc), and all volunteers. Dispatch, fire prevention, and volunteers articulated a sense of isolation and exclusion from other fire service personnel and from the CISM program;
  - recruitment and retention of CISM team members, and a succession plan for team coordinators. With the support for the program and the evidenced need to enhance existing services, as well as the need to provide services to other halls and trades, more team members will need to be trained and mentored. Also, the day-to-day duties of team maintenance, training, and record-keeping fall to the team coordinators. Organizational support must be provided from the grassroots, as well as management, in order to sustain the coordinators.
4. Development and presentation of family education modules. Since families/spouses are being used as one of the primary supports post-incident, it is imperative that, in

- order to sustain the family system, family members be given the tools and information to help them cope not only with firefighter stress, but also the family's potential for vicarious traumatization. Education content will need to be age-specific and minimally will include common stressors, common stress reactions, and strategies to support a distressed fire service family member.
5. CISM concepts and awareness are to be enhanced at all levels of training, from pre-fire to Level II firefighter, and will continue through the firefighter's career. This will assist in not only shifting the fire service culture to one of health promotion, but will also serve to decrease the isolation of particular trades and the volunteers. If CISM becomes as much a part of the firefighter's training as fire management, medical aid, hazardous materials management, etc., it will support health and injury prevention throughout fire careers.
  6. Program evaluation, in the form of satisfaction surveys and other evaluation resources, are to be developed and implemented immediately to ensure program targets are being met. There is little evidence about the numbers of CISM teams that are operational. There appears to be little understanding of the differences in models, of the need for ongoing training, or of the need for program evaluation. This is one of the major contributors to the controversy in the field. With utilization-focused evaluation, the benefits of the CISM program, as well as the opportunities for growth and change, would become evident.

## **CHAPTER 5: STUDY IMPLICATIONS**

Outcomes of this study have implications in three key areas: theoretical implications, methodological implications, and organizational implications.

### **5.1 Theoretical implications:**

A key aspect of this project's process and outcomes is the theoretical framework in which CISM is situated. Traditionally, CISM has been seen as the end-product on an illness-wellness continuum. Intervention and treatment are prescribed in order to prevent or cure disease (PTSD); however, psychiatric epidemiology remains problematic, even though PTSD remains the measured/measurable outcome. This study's recommendations take much more of a socio-cultural view of standards and outcome definitions. There is recognition within the field that a framework other than an illness-wellness continuum is needed:

The emotional distress that falls clearly below the diagnostic threshold for PTSD (subdiagnostic distress) that is prevalent among individuals exposed to catastrophic events deserves different mental health interventions from the customary psychiatric treatment for the minority who develop a diagnosable disorder (North & Pfefferbaum, 2002, p. 634).

CISM fits conceptually and actually into a health promotion framework, not in the traditional "illness" framework. This project, in keeping with both the ICISF approach and a health

promotion perspective, looked at post-incident reactions as normal and asked what aspects of resilience and health do firefighters value. CISM, when viewed from a health promotion perspective, is distinctly different from the more common *pathology* or *disorder* of post-traumatic stress with its subsequent curative perspectives. Health is seen as a resource for living, and uses personal resources and the social network of the fire service to define and sustain health. This is a radically different perspective than that which views critical incident stress as one more subset of DSM IV nomenclature. Symptomatology of PTSD follows “a decay curve” (Corneil, 1993, p. 244), but firefighters in this study, as evidenced by their responses to “what works” are not inclined to go down a path of decay, nor are they inclined to wait while their symptoms decay. Clearly, the firefighters see health as a resource available within and around them. It is available and accessible, but is not imposed upon them. Resources such as social support, meaning making, organizational support, and reiteration of personal coping strategies are used to enhance health.

Empowerment and emancipatory learning are key concepts within health promotion, and currently exist within CISM and the fire service. Although firefighters did not define their personal coping, meaning making, and social support as *learning*, they did, in the process of describing what works to mitigate the effects of critical incidents, describe the process of transformational learning (Meizerow, 1978). Learning requires 3 interactive processes: critical reflection, collaboration, and communication (Marsick, Bitterman, & van der Veen, 2000). In CISM there is reflection on actions, thoughts, feelings; there is sharing of experiences and coping, and there is communication among all members of the crew or on-scene group. The group processes involve cognitive reframing “which typically leads to

experimentation and trial and error” (Marsick et al, p. 13); the group, through an iterative process, “makes sense of the challenge by integrating perspectives, which leads to mutual construction of new knowledge” (Marsick et al, p.13). Rather than a prescribed learning by a teacher or therapist, the group decides what is contextually needed and how to achieve it. Participants in this project were very clear that what was least helpful included such strategies as: being told how to handle their reactions and having someone external to the situation provide them with a reason why the event occurred. What was helpful was having people they know remind them the event was abnormal but their reactions are normal and to remind them of their existing coping strategies, having opportunity to connect with family/friends and to re-establish their social networks, and to talk to others who had been through a similar experience – all internal strategies that help to reframe, make meaning, and share perspectives.

The theoretical implications of this study challenge the prevailing paradigm of illness treatment upon which much of the research in CISM has focused on. Implementation of the recommendations, as well as future research in the field, will require a significant shift away from illness, and towards health promotion and self-efficacy models.

Currently, health professionals:

consistently presume our major task is to motivate individuals and groups to take greater responsibility for their health. We define their deficiencies and calculate how we might manipulate them into acting in ways we think best. We deny people choice,

and, intentionally or by accident, subtly or blatantly, rob them of their own capacity for power (Labonte, 1989, p. 24).

These are key concepts underpinning the existing medical/illness model. Within a health promotion model, however, health is defined by those who experience it and is expressed by the community or culture. Labonte (1989) recommends that within a health promotion framework, health professionals consider that "...if health is fundamentally an expression of our social relationships, then our principle task is straightforward: attempt whenever possible to facilitate small group development" (p. 28). This empowers individuals and groups to define not only their health, but also a shared perspective on how to enhance health. This, in turn, is a reflection of Bandura's self-efficacy model – an approach that "leads to coping behaviour, understanding others, communicating, learning new skills, and dealing effectively with life's challenges" (Marsick, Bitterman, & van der Veen, 2000, p. 23). Again, instead of externally imposed diagnoses and treatments, individuals and communities are effectively meeting their self-defined needs. A health promotion, self-efficacy approach requires a deep and abiding belief in the essential capacity of people to survive and thrive, often in the face of significant life challenges – a leap of faith, so to speak, away from the power-over medical model to emancipated health for all.

Health promotion is not a new concept although literature and curricula in the helping professions focus still, almost exclusively, on illness and the treatment of identified medical diagnoses. Canada has taken the lead among industrialized nations in acknowledging that medical interventions are not primarily responsible for the health of individuals and nations. In 1974, the Lalonde report identified environment, lifestyle, human biology, and health care

organizations as concepts that are interdependently responsible for health (Health Promotion Agency of Northern Ireland website). The Lalonde report set the stage for five subsequent global conferences on health promotion, and prompted the proliferation of book, journals, and agencies dedicated to the practice of health promotion. The United States, New Zealand, England, and Wales developed health targets to raise the overall status of health in their nations (Edelman & Mandle, 1998). Monitoring systems and outcome measures were developed in order to evaluate progress – an approach that reflects an enduring empiric orientation – an orientation that is reflected in the current divisive debates on the efficacy of CISM. Canada, however, took a different approach and developed a “collaborative strategy in a partnership with interdiscipline and intersectoral groups of many health professionals” (Edelman & Mandle, p. 670). The result of those partnerships has been the development of ecologically and contextually correct and effective initiatives that “promote the concepts of participation, empowerment, and ownership of programs by the communities, thereby encouraging local action around the health problems” (Edelman & Mandle, p. 670). The Canadian approach to health promotion more accurately reflects a wellness matrix, in which CISM may be utilized as a tool for health, not the end-process requiring it to prove itself effective. The United States has continued to focus on health care and has emphasized health screening, illness prevention, and treatment strategies. Health promotion and CISM use health (rather than health care) as the start point. Health is viewed from the social context, rather than viewing health status from within a healthcare context. Although the differences between health care and health promotion are often assumed and not articulated, health promotion is embedded in the recent Romanow report on the future of the health of Canadians (Romanow, 2002). There is a danger in Canada, however, of returning to the

medicalization of health promotion due to rationalization of funding, the marketing of the medical/scientific model, and the demands for empirical ‘proof’ of efficacy. This research project provides evidence that firefighters see themselves and CISM, and not health care, as their resources for health – again, a significant shift from the prevailing medical model.

## **5.2 Methodological implications**

The methodological implications further challenge the prevailing hegemony by approaching CISM research from a grounded theory perspective. Grounded theory provided a window into the lived experience of firefighters, and provided an opportunity for firefighters to define CISM practice. This project also sets the stage for further opportunities for grounded theory research into, for example, the role resilience, hardiness, leadership, and culture play in health promotion. There are also vast opportunities for evaluation research. As well, the outcomes of this study will be of interest to the field, not only because of the positive endorsement for CISM, but because the outcomes arise from an experience with qualitative systematic review and inquiry. This project allowed the service recipients a “voice” in what works best for them in their context and culture. This is a significant shift away from recent calls for randomized controlled trials (RCT). The idea of a conceptual shift in research methodology is shared by Deahl, Scinivasan, Jones, Neblett, & Jolly (2001): “Randomized controlled trials are not the sine qua non” (p. 35).

Corneil (1993) articulates the commonly held assumption that in quantitative research “...the independent variables are not only independent of the dependent variable, but independent of each other as well” (p. 131). This prevailing belief begs the question: how, for the purpose



of research, can human beings be segregated from one another, and from their lives and experiences? Is it possible to quantify discrete aspects of human lives, thoughts, feelings, or perceptions or to view in a laboratory or under a microscope the bits and ‘bytes’ of humanity in isolation of the whole? This project sees the human system as much too complex for strictly quantitative analysis, and sees more enlightened paradigms that consider experiential evidence as imperative. This does not mean, however, that systematic inquiry is not necessary. Systematic review and reflective inquiry are critical to developing new knowledge in the field – but such inquiry must occur in the context of the lived experience.

### **5.3 Organizational implications**

The organizational implications of the research include the cultural shifts that are necessary in order to ensure inclusive availability and access to CISM programs. As well, there are financial implications for the fire service, particularly those departments who are currently without a program. Also, ensuring CISM access to all members will require recruitment and training of new team members.

#### **5.3.1 Increased access to CISM programs**

Marsick, Bitterman, & van der Veen (2000) state that the “ability of groups to collaborate is clearly affected by power dynamics and the culture of the organization” (p. 13). It is therefore imperative for the success of CISM that fire service culture shift to be inclusive of all members of the organization: members of the union, management, volunteer, career, and all trades must feel ownership of the program. Hierarchy, history, and labour relations have a place within the service, but not within the CISM program. CISM can be used as the

teaching tool that transforms what Freire (as cited in Meizerow, 1978) describes as “meaning perspective” (p. 100). CISM transcends the traditional emergency services culture of silence and repression by co-creating new culture in which personal meanings are shared in the group and workplace context, and new meanings can be constructed. Flannery (1995) found that overwhelming events disrupt personal meaning, and that CISM is frequently the first opportunity to begin to construct new meanings.

### **5.3.2 Peer support**

“Engagement in social practice is the central method by which learning takes place”  
(Marsick, Bitterman, van der Veen, 2000, p. 25)

There are further advantages to utilizing a peer support model. Marsick, Bitterman, and van der Veen (2000) talk about informal relationships which foster “autonomy and creativity in individuals”, and which “supports self-realization...and the development of characteristics such as courage and endurance” (p. 44). Formal and external organizations “may well be limited in addressing contemporary challenges around diversity and power differences”, and are missing “a focus on helping...to engage in a continuous, critical, constructive dialogue around stated and actual needs.” (Marsick et al, p.28). The peer support process was strongly endorsed by participants and was found to be very helpful in mitigating the effects of stress.

### **5.3.3 Program sustainability**

Consideration must be given to the costs of developing and maintaining a CISM program. This program did not look specifically at the cost-savings, such as decreased sick time, that come with happier, healthier personnel. However, Corneil and Kirwan (1997) in their report

of northern nurses found a substantial dollar savings after the introduction of a CISM program. Other sources have posited a credible link between work satisfaction and decreased sick time.

Coping is a highly contextual concept and process, involving cognitive appraisal and reappraisal of threats, and options (or not) to change a situation (Everly, 1990; Lazarus & Folkman, 1984). Program sustainability requires strong leadership - transformational leaders who employ strategies and ethics (Yukl, 2002) in this specialized culture. Those leaders may include existing managers, but are also found in the diverse settings of the communications centres, prevention offices, and among firefighters themselves. A belief in the well-being of co-workers, and a commitment to the concept of a healthy workplace are the foundations for a successful CISM program; belief and commitment are not the sole domain of the designated leaders in an organization.

There is a dearth of literature that addresses volunteers, paid-on-call, or auxiliaries within the fire service; given that there are many volunteers in the fire service, this would be an area for future research. Tension is evident between the volunteer and career members, even within the same department. This deep division is not unique to firefighters, but is common in any organization that uses part-time and full-time staff. There are examples currently within the American military who are expecting reservists to compensate for the decreased availability of military personnel for homeland defence – some news reports feature ‘man-on-the-street’ interviews with people who are expressing reluctance to rely on part-time militarists because the perception is the part-timers are less prepared to meet the challenges of national defence.

Within the fire service, perceptions of preparedness and training are key issues that divide career and volunteer members.

The data clearly explicates the gulf between career and volunteer members, and between union and management. The recommendation that CISM continue to be supported, and to have enhanced components, requires not only a financial commitment, but a cultural commitment as well. The cultural focus within the fire service must continue to shift from hierarchy and hegemony, to collaboration and support.

Marsick, Bitterman, van der Veen (2000) state “organizations are social constructions” (p. 10) and individuals bring new idea and learning to an organization. But organizational or “systems learning cannot occur unless the system as a whole is adequately prepared to absorb and use this learning so it can be shared, easily accessed, and productively employed in the service of the system’s agreed-upon vision” (Marsick et al, p. 10). Systems learning and cultural change, even though they are occurring ongoingly, are difficult concepts for conflicted systems to acknowledge. In a climate of hierarchy and labour unrest the conceptual frameworks of change and learning from change are difficult to explicate without individuals becoming the target of ridicule and worse for being the voice that challenges the status quo (even though in dynamic systems the status quo is a non sequitor).

Precedent exists within the fire service. For example there is hierarchal structure with union and management working together on the fire ground. Action on the fire ground is centered, not around individuals, but around the process and outcome of the fire scene. There are

people giving orders, people taking orders, people working cooperatively to achieve the common goal. There will always be a need for hierarchy on the fire ground. But that doesn't mean hierarchy back at the fire house is the most effective way of being for today's firefighter. Another example is fire investigation which is centered not on organizational structure or hierarchy, but on the process of systematic review of indicators of the cause of the fire. CISM is also not about union/management, career/volunteer, but about the *process* of mitigating reactions to awful events. Having a 'department' CISM program requires that it is available and easily accessible to all members of the department. It is evident from this study that extra priority will need to be given to ensuring availability of some/all components to management, other trades (i.e. prevention, dispatch), and to the volunteers.

However, history and hierarchy are not conducive, nor receptive, to social change. In today's changing organizational world "...hierarchies are increasingly being replaced by lateral alliances and social relations" (Tyler and Kramer, 1996, p. 3). Meyerson, Weike, & Kramer (1996) also describes opportunities to develop trust quickly in rapidly changing groups and organizations. The CISM programs within the fire service can learn from other rapidly changing organizations, and continue the precedent of leading and supporting change within their own departments.

## **CHAPTER 6: LESSONS LEARNED**

“...developing any skill is a journey that starts...with a certain level of ignorance and incompetence” (Perkins, 2000, p. 216).

In reviewing the lessons learned in this project, several themes became evident. The themes are centred not on what didn't work, but what ideas, ideals, and processes carried this project through to fruition. The meta-concepts underpinning the project are perseverance, passion, power and empowerment, and health promotion.

### **6.1 Perseverance**

- There will be times when the project will seem all-consuming, and that life away from the computer screen is non-existent. Never lose sight of the end-product or goal, but have some short-term objectives: set up a schedule for accomplishing specific tasks such as project design, completion of individual chapters, etc., and stick to the schedule.
- The corollary of that is to ensure your schedule is flexible enough to allow for 'life' to get in the way; timelines may need to be extended.
- Use a variety of tools to aid in organization and documentation: computer programs for data analysis and referencing, for example. Use a research log, in whatever form works for you. After several months of immersion in the project, it is impossible to keep track of references, ideas, new directions. Reflecting back in the log not only helps to re-centre you, but also allows you to see your progress toward the goal.

- Post your research question above your work area in bold, colourful print so that you can constantly return to it. Be brutal in your editing – if information in the body of your work does not directly relate to your research question, delete it.

## 6.2 Passion

- Be a realist, as well as an optimist. Remain grounded in the reality of timelines and data analysis techniques for example, but stay positive and confident about your outcomes – your work is worthwhile and is contributing to knowledge in the field.
- Within your field of study, ensure you have mentors and guides. Have a faculty advisor who not only is a researcher and can guide the research learning, but can also converse knowledgeably with you about your topic. Having someone who can ask challenging and thought-provoking questions about the topic helps to ‘keep the juices flowing’ and encourages conceptual thinking as well as helping with research details.
- There will be times when enthusiasm for the project and the topic will lag, even disappear completely. When enthusiasm falters, it is helpful to return to the field - not as a researcher, but as a student or consumer - and to fully experience the phenomenon under study. Field experience is a powerful catalyst to re-ignite passion and *raison d’être*.
- Be willing to take risks, but not unnecessary chances, to ‘action’ the options. Become knowledgeable about the implications of the research - to the organization under study and to the implementation of outcomes – as well as the personal risks the project entails. Knowledge allows for careful calculation of the odds for success of a variety of options - whether the option entails staying the course or jumping into an abyss of change.

### 6.3 Power and empowerment

- Have a genuine positive regard for the topic, for the process, and for the cultures in which the research is centered. Never lose sight of the people themselves within the culture – a genuine belief in their ability to survive and even thrive regardless of the research project is a core belief, and embodies empowerment.
- The culture of empowerment includes not only the culture of the organization under study, but the culture of the university which oversees the project. There are “rules” of research, and the messenger that delivers those rules is often the graduate school whose name will be attached to the final documents. Concurrent with learning about research, it is useful to learn about the rules of communication, presentation, and publication of the major project. Acceptance into a graduate program means accepting the framework outlined by the university; be aware of that framework before starting the project, and think through the implications.
- Choose your battles. For example, it is non-productive to battle paradigms in the field at the same time you are battling to learn about the research process and how best to represent your project. Leave the broad paradigmatic debates until you have finished your project; you will find that the research will speak for itself. It is this writer’s experience that it is not possible to debate someone away from paradigm, however, new research evidence and evidence-based practice are powerful tools to aid paradigmatic shift.



- Develop partnerships with like-thinkers within the organization under study. Ensure the perspectives of those internal experts are represented throughout the project, from preliminary exploration of the topic to publication of the final report.
- As the project leader, reflect the core team values of respect, mutuality, and equality. Modelling such leadership values ensures the team culture becomes one of collaboration and empowerment, as well as relational practice – focusing on the relationships of organizations as well as the ‘bottom line’ or organizational mission.
- Throughout the project, reiterate and reinforce the team message. Share the project vision, and ensure there is a process in place for sharing the outcomes with all members of the organization.

## **6.4 Health promotion**

- Develop “strategies for stamina” (Perkins, 2000, p. 56). Research is not only a journey of the mind, but a journey of the soul; it challenges basic personal beliefs, values, and energy, as well as organizational and cultural ways-of-being. Implementing strategies for maintaining one’s own mental and physical health are imperative. Leadership means dealing with your own fears, frustrations, and misgivings in healthful ways, and then assisting the team when issues of morale and stamina become evident.
- Laugh – often, long, loud, and crudely! Research can be very much ‘in-your-head’ and researchers sometimes become self-absorbed and narcissistic. Stepping outside of the project and looking at, then laughing at, the paradoxes of life is sustaining. Having a good belly laugh not only serves as a brief distraction from the intensity of

the moment, but also changes brain chemistry. Oxygen is taken in with a big laugh, endorphins are released, and cortisol levels (the so-called stress chemical) are decreased; the end result is an ability to think more clearly as blood flow to the brain is increased. Often the laugh is shared with someone else, which also serves to enhance and sustain social relationships by providing an opportunity for the researcher to briefly step out of the research process and rejoin the world.

- Finally, use “tenacious creativity” and “never give up – there’s always another move” (Perkins, 2000, p. viii). In this writer’s experience, having a deep and abiding belief in your work and your team are the most sustaining factors in research. Relying on the support and perspectives of others helps to maintain a broad world view within the framework of the research project by encouraging the researcher to think ‘big picture’, particularly when in the midst of thousands of bits of data. As well, having a tenaciously creative team ensures that the process of research does not overshadow the voices in the project; the perspectives of research participants are represented throughout the project. Also, ongoing planning and problem-solving allows challenges to be met in a thoughtful and systematic way, similar to pre-incident planning in CISM. It is more effective to look for solutions to potential problems, and to come up with a number of options, before a crisis occurs.

“We cannot walk alone...we cannot turn back...I have a dream.” (Martin Luther King, Jr., 1963).

This project has provided many opportunities: to systematically engage in learning (the research process); to demonstrate leadership (collaboratively develop and implement a research project); to demonstrate efficacy of a program (CISM works by decreasing the levels of distress that firefighters experience after an incident); to provide a forum for firefighters to define how CISM works (participants described social support, personal coping, and meaning-making strategies); to share outcomes in the field (presenting the findings at a conference); and to enhance existing relationships with colleagues in the field (relying on the input from the Advisory team throughout the project). As well, the project has led to new areas of inquiry in the field, and provided new research opportunities.

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## APPENDIX A

### Participant Consent Form

#### **IN THE INFERNO**

#### ***CRITICAL INCIDENT STRESS MANAGEMENT (CISM) IN FIRE DEPARTMENTS: What works and how do we know?***

#### **ROYAL ROADS UNIVERSITY RESEARCH PARTICIPANT CONSENT FORM & SURVEY**

**INVESTIGATOR: Leigh S. Blaney, MA Candidate  
PROJECT SUPERVISOR: Tom Rippon, PhD Candidate**

Dear Participant:

This letter is a request for your participation in my research project. The following information pertains to the study methods, and a tear-off page contains the questionnaire.

I am investigating the effectiveness of Critical Incident Stress Management (CISM) programs in select British Columbia fire departments. The project focuses on the firefighters' (your) perspective of what works for you with CISM, and how you know it works. I am asking firefighters from three departments to participate in the study by filling out a questionnaire on CISM. I will then analyze the responses for themes, validate the information with an advisory group of firefighters, and develop a report from the responses. This research project is in partial fulfillment of the requirements for a *Master of Arts, Leadership and Training* from Royal Roads University.

The key issues that drive this project are:

- CISM programs have existed for nearly 20 years;
- There has been little research on the effectiveness of CISM programs, hence those programs have come under fire in the past few years by researchers and service providers;
- Some scientists are claiming that CISM does not work;
- Generally, no one has bothered to ask the participants - emergency service providers for whom CISM was originally designed - for input into the effectiveness of CISM programs;
- I have worked with emergency services personnel, firefighters in particular, for over 15 years as a CISM provider and trainer; I believe CISM programs are effective tools in maintaining the psychological health and safety of personnel.

Your participation in my project is voluntary; if you do not wish to participate, simply do not fill in the questionnaire. Filling in and submitting the questionnaire will be considered your consent for participation in the research.

All information gathered in the course of this research project will be kept strictly confidential. All questionnaires will be anonymous to the investigator. Any identifying information will be removed from survey responses, unless otherwise requested by you on your questionnaire. I, as the principle investigator, or a hired confidential secretary will transcribe all survey responses. Identifiable information and original surveys will be kept in a locked and secure location, and will be destroyed six months after the study is accepted as complete by Royal Roads University (May, 2003). The data from all phases of the research project will be included in part of the final report, and may also be used in other settings such as operations manuals, training documents, and conference presentations.

The benefits to you of participating in this study include the opportunity to:

- Participate in a field study on a topic of interest and value to all firefighters
- Share your knowledge and expertise in the fire service and CISM
- Participate in the design and implementation of an evaluation framework for CISM programs
- Contribute to, and build on, the existing international knowledge in the field of CISM by adding your perspective to this project
- Describe, from the unique fire service perspective, what works in CISM programs, and what improvements are needed.

The questionnaire will take about 10 minutes to complete. It asks about critical incidents you may have experienced in your work as a firefighter. If, at the time you are filling out the questionnaire or afterwards, you experience any reactions that are troubling, please contact your department's CISM peer support network, your employee assistance program, or contact me directly for a confidential referral to a CISM provider in your area. It is not unusual for reactions to be "triggered" weeks, months, or years after the critical incident, but it is important that you have an opportunity to discuss those delayed reactions if they occur.

Thank-you for considering participating in my project. If you have questions, comments, or concerns, please do not hesitate to contact me by phone ---, or email: ----

Please return this questionnaire in the sealed envelope (through the department mail) to Ron Daly at the #1 Hall by **November 30**. It will be forwarded unopened to the Principle Investigator. Preliminary results of the study will be available in February; a final report will be delivered to your department in June 2003.

Leigh Blaney

October 10, 2002

## APPENDIX B

### Research Questionnaire

**IN THE INFERNO**  
**CRITICAL INCIDENT STRESS MANAGEMENT (CISM)**  
**IN FIRE DEPARTMENTS:**  
*What works and how do we know?*

**RESEARCH QUESTIONNAIRE**

1. Gender: M \_\_\_\_ F \_\_\_\_
2. Age: 18-24 \_\_\_\_ 25-34 \_\_\_\_ 35-44 \_\_\_\_ 45-54 \_\_\_\_ 55-64 \_\_\_\_
3. Current Fire Service: Career \_\_\_\_ Volunteer \_\_\_\_ Combined \_\_\_\_
4. Overall years of service: < 1    1-4    5-9    10-14    15-19    20-24    25+
5. Does your department have a CISM program?    **Yes**    **No**    **Don't know**  
 If yes, how often are awareness sessions presented?  
**Annual**    **Every 2 years**    **Never**    **Don't know**
6. Please answer: *In my organization, I feel a sense of peer support*  
**Always**    **Often**    **Sometimes**    **Not often**    **Never**
7. When did you last experience a work-related critical incident:  
**never**    **in the past year**    **past 2-4 years**    **past 5-10 year**    **over 10 years ago**
8. What was the nature of the critical incident you last experienced?
  - An event that was life-threatening, or had threat of serious injury, to yourself \_\_\_\_
  - On-scene fatality \_\_\_\_
  - Death or serious injury of colleague \_\_\_\_
  - Death of a child \_\_\_\_
  - Disaster or large-scale incident \_\_\_\_
  - Gruesome scene \_\_\_\_
  - Other (please describe) \_\_\_\_\_
9. What reactions did you have to this incident? (please describe any specific physical, emotional, thinking, spiritual, or behavioural reactions you had)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
10. What helped you deal with/live with your reactions?  
 \_\_\_\_\_  
 \_\_\_\_\_
11. a) Was a CISM intervention provided?    Yes \_\_\_\_    No \_\_\_\_  
 b) Did you attend?    Yes \_\_\_\_    No \_\_\_\_  
 c) Why, or why not? \_\_\_\_\_

12. **Before a CISM intervention was provided**, what impact did you notice the following common symptoms or reactions to the critical incident having on you:

	very distressed	upset	no effect	felt okay	felt great
Physical (sleep disruption, nightmares, upset stomach)	___	___	___	___	___
Emotional (anxiety, irritability, emotionally numb)	___	___	___	___	___
Cognitive (forgetfulness, flashbacks, difficulty concentrating)	___	___	___	___	___
Behavioural (restlessness, changes in routine activities)	___	___	___	___	___

13. If an intervention was provided for your last critical incident, what type of intervention(s)?

Education Session	___	1:1 Peer Support	___
Group defusing	___	CIS group Debriefing	___
Referral to a mental health professional	___		
Family support or education	___		
Other (please describe)	_____		

14. **After a CISM intervention was provided**, what impact did you notice the following common symptoms or reactions to the incident having on you:

	very distressed	upset	no effect	felt okay	felt great
Physical (sleep disruption, nightmares, upset stomach)	___	___	___	___	___
Emotional (anxiety, irritability, emotionally numb)	___	___	___	___	___
Cognitive (forgetfulness, flashbacks, difficulty concentrating)	___	___	___	___	___
Behavioural (restlessness, changes in routine activities)	___	___	___	___	___

15. After you experience a critical incident, what helps you the most? \_\_\_\_\_  
How do you know it helps? \_\_\_\_\_

16. After you experience a critical incident, what is the least helpful? \_\_\_\_\_  
How do you know? \_\_\_\_\_

17. What personal attributes do you have that help you cope with stressful events?  
\_\_\_\_\_  
\_\_\_\_\_

18. Other comments about your experience with CISM:  
\_\_\_\_\_  
\_\_\_\_\_

Thank you for your time and participation.

**Leigh S. Blaney (Principal investigator)**

**Phone: ----- or email: ----**

*Please return this questionnaire in the sealed envelope (through the department mail) to Ron Daly at the #1 Hall by **November 30**. It will be forwarded unopened to the Principle Investigator. Preliminary results of the study will be available in February; a final report will be delivered to your department in June 2003.*