# Critical Incident Stress Management of the Local Emergency Manager in the United States

Research Completed by UCF's Fall 2015
Managing Emergencies and Crisis Graduate Students

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and Director Alan Harris with Seminole County Office of Emergency Management

For the Florida Emergency Preparedness Association

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# Executive Summary

The field of emergency management is continuously expanding with 9,900 emergency managers and a projected increase of 6% between 2014 and 2024 (U.S. Department of Labor, 2016). These individuals hold a unique role during an incident with the requirement to make decisions under various levels of stress. The stress effecting emergency managers is similar in nature to the types experienced by first responders, yet this aspect is not well researched.

Although the working conditions may be similar to first responders, emergency managers must deal with added pressures of coordinating complex and dynamic response efforts involving a wide range of professional actors. Moreover, emergency managers are forced to make quick decisions with limited or incomplete information. This further complicates the decision-making process, increases stress and concern about unintentional negative outcomes. The potential effects of stress causing health issues are quite real. Fortunately, there are actions to counteract and mitigate negative effects. There are many CISM techniques utilized by professionals, including inner dialogue, coping, debriefing, defusing, and pre-crisis education.

The Florida Emergency Preparedness Association (FEPA) requested assistance on crisis incident stress for local emergency managers to advocate for legislation identifying local emergency management staff as special or high risk. Moreover, FEPA seeks to develop programs to address and reduce stress.

The research-oriented project specifically identified:
1. Defining critical incident stress
2. Demographics on emergency managers
3. Types of stress emergency managers experience and health effects
4. Effective critical incident stress management techniques

Under the guidance of Dr. Claire Knox and Director Alan Harris, 30 graduate students in UCF's Managing Emergencies and Crises course spent 12 weeks researching approximately 100 unique sources of information from academic, government, and professional associations. No academic literature was found detailing how many emergency managers exit the field after disasters or the life expectancy of those in the emergency management.

The research findings include:
- Critical incident stress is psychological or emotional trauma associated with a critical incident, which includes physical, cognitive, emotional, and behavioral types of stress.
- Emergency managers are primarily Caucasian, male, averaging 45-65 years of age, 10-15 years of previous emergency management experience, and have worked an average of 3.8 major disasters/incidents. Younger individuals entering the field are more diverse (gender, ethnicity) and more likely to have a specialized post-secondary degree.
- Emergency managers and staff experience issues including potential injuries, post-traumatic stress disorder, mental health disorders, panic disorder, depression, social dysfunction, acute stress disorder, heart disease, hypertension, stroke, and sleep apnea.

Summary of Recommendations:
- Enhanced availability to Employee Assistant Programs for continued access to counselors or any social service staff.
- Due to the nature and occupational experience, we recommend local emergency managers be legally classified as a "high-risk" population and an awareness campaign of the occupational hazards and effects of critical incident stress be implemented to all emergency management staff across the country.
- Multiple critical incident stress management (CISM) techniques should be employed to account for generational, gender, and cultural differences. Shifting demographics may alter the way we understand how this stress effects the local emergency manager.
- Mandate education and experiences requirements for entry into leadership positions within emergency management, which will provide highly trained and highly adaptable personnel who are capable of handling high-level stress incidents while providing training and mentorship to staff.
- Require CISM training in the Associate and Certified Emergency Manager application process.
- Add CISM as a core competency in emergency management and homeland security higher education programs.
- FEPA should continue working in a collective effort to identify CISM techniques that are most suitable, perhaps embracing the animal-assisted therapies that have shown to be complementary to the Mitchell Model.

This report contains a summary of the literature, methodology, and findings, and concludes with recommendations for practice and future research.

# Introduction

The U.S. Department of Labor (2016) states there are 9,900 emergency management directors with a projected 6% increase between 2014 and 2024. These directors have a median annual salary of $59,770 and a majority work for state or local governments while the minority work for private companies, hospitals, or nonprofit organizations. Speaking to the educational environment, there are 242 emergency management academic programs: 9 doctoral level, 41 masters level, 47 bachelors level, 48 associates level, and 97 certificates and minors (Federal Emergency Management Agency, 2015). Since the terrorist attacks on September 11, 2001, multiple policy and institutional changes have shifted emergency management to a more collaborative approach with interest in building the local government's capacity in all phases. These changes have placed additional burdens on local emergency managers (Hu, Knox, & Kapucu, 2014).

The important work of an emergency manager cannot be overstated. Whereas the government is seen as the provider of warnings, evacuations, and shelter, the emergency manager creates the systems for such responses to be conducted in a clear, comprehensive, collaborative, and coordinated way (Kendra & Wachtendorf, 2006). The responsibilities of emergency management are to mitigate from, prepare for, respond to, and recover from any hazard while enhancing the whole community's resilience. Kapucu and Ozerdem (2013) conclude one inevitable aspect of emergency management is stress brought on by the chaotic environment and often disjointed actions.

LaFauci, Schutt, and Marotta (2011) acknowledge that emergency managers are an understudied group in the literature, but believe we can draw correlations between emergency managers and first responders as both groups experience similar role conflicts and ambiguities. The impact of stress on an individual's health and professional judgment are significant and can lead to slow response, misinformation, and poor decision-making. Thus, integrating stress management techniques is essential. However, little research has been conducted on understanding the effects of stress on emergency managers and their team. Therefore, while the objective of this project was to focus on critical incident stress management for emergency managers, we completed a broader search to include first responders to capture a larger literature.

### *Defining Crisis Incident Stress Management*

The literature related to critical incident stress, management, and debriefing dates back to the early 1900s with inquiries as early as the 1906 European mine disaster (Stierlin, 1909). First developed for use with military combat veterans and civilian first responders (i.e., police, fire, ambulance, emergency workers, disaster rescuers), crisis incident stress management has now been adapted and used virtually everywhere to address traumatic impact in people's lives.

Table 1 includes additional definitions from multiple literatures, including health, nursing, and counseling. Specifically, Occupational Safety and Health Act (2015) define critical incident stress (CIS) as:

> Workers responding to emergency events and or disasters will see and experience events that will strain their ability to function. These events, which include having to witness or experience tragedy, death, serious injuries and threatening situations, are called "Critical Incidents." The physical and psychological well-being of those experiencing this stress, as well as their future ability to function through a prolonged response, will depend upon how they manage this stress. Post-Traumatic Stress Disorder differs from critical incident stress by lasting longer than four weeks after the event triggering the emotional, mental, or physical response. Most instances of critical incident stress last between two days and four weeks (para. 4).

**Table 1.** *Summary of Critical Incident Stress Definitions*

| Source | Definition |
|---|---|
| Oster & Doyle (2000) | A psychological or emotional trauma associated with a critical incident. |
| Caine & Ter-Bagdasarian (2003) | A situation that may induce an emotional impact so severe that it impedes an individual's usual coping abilities. |
| Mitchell (2004) | A state of physical, emotional, cognitive, and behavioral stimulation that follows a crisis response; critical incidents create an increased state of stimulation. |
| Blacklock (2012) | The emotional stress endured by individuals, which is a result of their experience to one or more critical incidents. |
| Halpern, Maunder, Schwartz, & Gurevich (2012) | Situations that can cause extreme emotional distress, which may progress into critical and long-term impairment. |
| Avraham, Goldblatt, & Yafe (2014) | Situations that can reduce an individual's capacity to function either at the scene of the event or after the event. |

Critical incident stress management (CISM) is an intervention protocol developed for dealing with traumatic events. It is a formal, highly structured and professionally recognized process for helping individuals share experiences, vent emotions, learn about stress reactions and symptoms, and access referral agencies. It is not considered psychotherapy, but is a confidential, voluntary and educative process sometimes referred to as "psychological first aid" (Müller-Leonhardt, Mitchell, Vogt, & Schürmann, 2014). Studies have shown roughly 87% of all emergency service workers experience CIS at least once in their careers with some suffering serious long-term consequences (Kulbarsh, 2007). Furthermore, stress and its related disorders will potentially cost organizations over $150 billion due to absenteeism, disability, and low productivity over the next 20 years (Caine & Ter-Bagdasarian, 2003).

# Methodology

Students conducted the research in an investigative manner by analyzing data from scholarly literature and material. Specifically, they searched multiple library databases and the Internet for various aspects of CIS, emergency manager demographics, types of stress, medical issues related to stress, and CISM techniques (see Appendix A for database search terms). Students searched:

- 11 databases through UCF's library (Academic Search Premier, Academic OneFile, JSTOR, ONET, Proquest Criminal Justice, SAGE Knowledge, Lexus Nexus Academics, MEDLINE, PsycInfo, ScienceDirect, and EBSCOhost)
- 8 professional and government organization websites (American Sleep Apnea Association, Center for Disease Control, Federal Emergency Management Agency, Mayo Clinic, National Emergency Management Association, OSHA, United States Department of Labor: Bureau of Labor Statistics, and the U.S. Fire Administration)
- Google Scholar
- International Association of Emergency Managers' social media discussion board

In addition, a few students contacted the Florida Emergency Preparedness Association and the International Association of Emergency Managers to inquire about previous research on this topic. Unfortunately, both efforts resulted in little to no additional information for this report. Moreover, students supplemented the literature search with semi-structured interviews with professionals in the field conducted in October and November of 2015.

- J. Theodore Wise, Retired Director of Cumberland County, Pennsylvania Emergency Services and current Communication Consultant with Mission Critical Partners, Inc.
- a local Battalion Chief with 23 years of experience and the current training chief
- a local Emergency Manager with 15 years of experience and directly involved in 5 major incidents/disasters
- Chief Anthony Rios, Orange County Fire and Rescue
- Special Agent Alphonso Williams, Florida Department of Law Enforcement
- Dorothy D. Cave, RPL NREMT EMD Program Manager APCO International

As the final project for the Managing Emergencies and Crises graduate-level course, student groups submitted formal summaries of the methodology, literature review, findings, and recommendations. In all, students utilized nearly 100 unique documents from multiple sources; 60 of which were used in this report (47 of journal articles/academic research, 4 government reports/white papers, 7 professional organization reports/guides, and 2 other). Dr. Knox then summarized the student papers into this white paper for Director Harris and the Florida Emergency Preparedness Association.

# Findings

This section includes findings on emergency manager demographics, types of stress, signs of CIS, and effective CISM techniques. Students found no literature detailing how many emergency managers exit the field after disasters or the life expectancy of those in the emergency management.

*Emergency Manager Demographic Information*

As summarized in Table 2, multiple case studies on emergency managers collected demographic information. The collective number of respondents characterizes the field as older (average age between 45 and 65 years old), male (76%), and Caucasian (93%). Moreover, emergency managers had approximately 12.5 years of experience and were involved in 3 or more major or nationally recognized disasters. (See Appendix B for detailed information).

**Table 2.** *Summary of Demographic Averages for Emergency Managers*

| Average Age | Average Number of Previous Disasters/Incidents Worked | Average Amount of Experience (in years) | Gender | Ethnicity | Education |
|---|---|---|---|---|---|
| 45-65 | 3.8 | 10-15 | Male | Caucasian | College Degree |

Yet, demographics of emergency management are shifting (Alexander, 2012). A 2014 survey found an increase in female emergency managers (26%) under the age of 46 (Weaver et al, 2014). The new generation of emergency managers, characterized as younger, more diverse, and more inclined to have specialized post-secondary education, reflects the emerging professionalization of the field (Monroe, 2009).

Speaking to geographic location, many emergency managers reported serving in mostly rural settings and the communities served were generally larger. In fact, 46.7% of emergency managers stated they worked in a rural setting, 16.6 in suburban, 14.1% in mostly urban, and 22.6% in a mixed setting. However, emergency managers employed in urban communities were more likely to be younger, college-educated, and earning higher salaries than their rural counterparts. In contrast, rurally located emergency managers reported a greater length of time as emergency managers and experience in the response field than urban emergency managers (Weaver et al., 2014).

*Types of Stress and Related Medical Issues in Emergency Management*

Emergency managers and first responders have the tremendous responsibility of saving lives. Their responsibilities demand they not only protect their own safety but also that of the community. When disaster strikes, whether it be a hurricane, flood or bomb, emergency management personnel must immediately take action to minimize the devastation and impact. Moreover, emergency managers are at risk of developing lasting mental and physical ailments that can go untreated. Approximately 5.9% to 22% of emergency personnel responding to critical incidents develop psychological trauma

and post-traumatic stress disorder (PTSD) (Flannery, 2015; Silove et al., 2006). However, it is important to note that all first responders experience some type of stress, typically through secondary traumatization.

Public emergency and safety workers, in particular, face three major sources of occupational stress: working environment, time pressure, and workload. Those in supervisory positions, including emergency managers, face extra pressure of performing several important tasks that often need to occur simultaneously, such as assessing needs, mobilizing resources, coordinating the efforts of multiple entities, and ensuring the correct information is reaching the media and the public (Hartsough & Myers, 1985; Von Humbolt et al., 2013).

These individuals also experience an extensive range of work-related physical and mental health consequences as a result of exposure to natural or man-made disasters (Benedek, Fullerton & Ursano, 2007). Paton (1996) identified multiple disaster-specific stressors: lack of warning, type of event, degree of uncertainty, presence of traumatic stimuli, lack of opportunity for effective action, intense media/public scrutiny, higher than usual levels of responsibility, higher than usual demands (physical and emotional), resource availability and adequacy, conflict between agencies, inadequate or changing role definition, and inappropriate leadership practices. Not all of these stressors may be present during an event; however, any number of stressors can interact with personal variables to influence an individual's perceived level of stress.

Perceived stress can negatively effect emergency managers and their teams. As Kowalski-Trakofler and colleagues (2003) explained, critical incidents regularly trigger stress reactions due to excessive demands on people's resources. For emergency managers, they are expected to make crucial decisions with incomplete information, a situation that enhances the effects of their own stress reactions Yet, judgment is not necessarily hindered by stressful circumstances; instead the perceived experience from the stress may cause judgment lapses. Van Wart and Kapucu's (2011) study highlighted the importance of emergency manager's rationing personal energy stores due to unknown duration of a disaster, working too many hours, being under pressure, and needing to appear strong.

For emergency managers, risk factors associated with stress begin during the alarm and mobilization phase of a disaster. Continuing through the response phase, these factors may still be present and filter into the recovery and reintegration phase. Once a warning has been triggered, the demands of comprehending and responding to the hazard, as well as the procedures in place to begin disaster mobilization influence stress risk. During the response, factors such as uncertainty, organizational practices, event-specific characteristics, and media reporting play a role. In addition, the reintegration stress risk increases due to work backlogs, reporting pressures, and legal repercussions (Paton, 2003).

Prolonged exposure to disaster-related pressures can cause counter disaster syndrome, where an emergency manager feels the fate of the response effort rests solely on their shoulders causing them to induce even more stress-related risks by not taking breaks, rotating personnel, or utilizing team resources effectively (Paton, 2003). Additionally, interagency conflict and miscommunication due to lack of common terminology is another potential source of stress emergency managers may encounter (Paton & Flin, 1999).

The utilization and collaboration of resources can help reduce stress faced by individual emergency managers. Foresight and preparation is critical to the success of an emergency management system and manager (Weaver et al., 2000). Experience leads to strength, but experience with disasters – mixed with low pay and a heavy workload – can lead to stress and have a negative impact on work ability and lead to high turnover rates (Oldenburg et al., 2014).

As detailed in Table 3, various factors can make an emergency manager and staff more or less vulnerable. Some characteristics that lead to an emergency management team to be less vulnerable are institutionalized emergency management best practices, including planning and establishing operating systems, training, multi-agency involvement, and strong computerized decision support systems.

**Table 3.** *Factors and Vulnerability Characteristics* (Paton & Flin, 1999)

| Factors | More Vulnerable | Less Vulnerable |
|---------|-----------------|-----------------|
| Personal Factors | • Ones who are not in the greatest health<br>• Nervousness<br>• Shyness<br>• Instability | • Self-efficacy<br>• Locus of control<br>• Tolerance for ambiguity<br>• Aware of personal strengths and limitations |
| Incident Management and Control | • Plans based on implicit and untested assumptions<br>• Vague incident management procedures<br>• Ad hoc demands | • Planning and establishing operational systems<br>• Training for emergency disaster work<br>• Presence of a well-trained, experienced team |
| Communication and Information | • Lack of processing capability<br>• Misrepresentation of information<br>• Use of agency specific language<br>• Heavy reliance on computerized decision support systems | • Multi-agency involvement<br>• Large numbers of personnel<br>• One common diction between agencies<br>• Strong computerized decision support systems |
| Decision Making | • Burned out team<br>• Long decision making process<br>• Unclear decision making process<br>• Low energy level | • Alertness<br>• Fast reactions<br>• High energy level<br>• Proper decision making process |

Nonetheless, emergency managers try to minimize the unavoidable stress reactions for first responders by holding pre-event trainings. Training may effect the role stress plays in an individual's perception and decision-making. For instance, stress may result in degraded or improved performance depending on the individual. Some individuals may feel negative effects causing their performance to suffer as stress increases. Conversely, other individuals find that increased stress results in elevated performance. For instance, athletes often excel and perform at an optimal level when they are competing with an ideal amount of stress. However, once the level of stress exceeds the ideal amount, the body becomes overstressed and performance declines as the individual approaches exhaustion (Kowalski-Trakofler et al., 2003).

### Signs of Critical Incident Stress

The literature acknowledges CIS occurs as an emotional response to a critical incident, which typically hinders an individual's coping abilities and functioning capacity. When left untreated, CIS may result in significant issues to an individual's physical, emotional, cognitive, and behavioral states, including suicide attempts, professional burnout, clinical depression, alcoholism, and may incite domestic violence acts (Blacklock, 2012). Table 4 includes the four signs of CIS from the Center for Disease Control (CDC)(2013).

**Table 4.** *Signs of Critical Incident Stress* (CDC, 2013)

| *Physical* | *Cognitive* | *Emotional* | *Behavioral* |
|---|---|---|---|
| Fatigue | Uncertainty | Grief | Inability to rest |
| Chills | Confusion | Fear | Withdrawal |
| Unusual thirst | Nightmares | Guilt | Antisocial behavior |
| Chest pain | Poor attention | Intense anger | Increased alcohol consumption |
| Headaches | Poor concentration | Apprehension | Change in communications |
| Dizziness | Poor memory | Depression | Loss/increase in appetite |
|  | Poor problem solving/decision making ability | Irritability |  |
|  |  | Chronic anxiety |  |

The *physical* demands appear as physiological changes in the body. The stress can lead to various medical issues and conditions over time. Emergency managers, in particular, may experience potential injury and loss of life. As previously mentioned, PTSD is a very common medical condition for many emergency managers and first responders. This intense psychological distress causes symptoms, such as difficulty in concentrating, headaches, nervousness, nightmares, difficulty falling or staying asleep, loss of appetite, anxiety, depression, irritability, and a feeling of detachment from others (Kowalski & Vaught, 2001).

*Cognitive,* or mental health, conditions such as panic disorders and depression also represent a significant threat to emergency managers' physiological and mental safety. Serious mental illnesses are potentially debilitating and lead to a higher risk for social dysfunction (Pearson & Weinstock, 2011).

*Emotional* demands can often go undetected. For example, Acute Stress Disorder is a medical condition commonly found in first responders. The responder experiences an initial stage of "daze" followed by withdrawal from their surroundings or agitation. This stage is known as flight reaction and includes panic anxiety symptoms of tachycardia and sweating. These symptoms usually appear within minutes of the stressful event and can disappear within a few days; however, if they do not subside, a medical professional familiar with PTSD should evaluate the individual (Lawson, 2013).

Episodic Acute Stress symptoms are persistent, can last for months, and require intervention from medical professionals (Miller & Smith, 2015). Research shows first responders diagnosed with PTSD had elevated biomarkers resulting in an increase in cardiovascular disease (Cable, 2014). Chronic Stress or continued exposure to stress experienced over time can be a contributing factor to long-term heart problems (i.e., hypertension, heart attacks, or strokes) as well as depression, obesity, anxiety, weakened immune system, muscle pain, and insomnia (American Psychological

Association, n.d.; Tovian et al., n.d.). The effects of chronic stress are devastating to the individual and their support network of families and friends (Miller & Smith, 2015). Heart disease is the number one cause of death for Americans as symptoms can stay dormant and are unknown to the person (CDC, 2015).

*Behavioral* signs vary, but can include sleep apnea, which involves an involuntary cessation of breathing that occurs while the person is asleep. The most common form is obstructive sleep apnea and, if left untreated, can cause high blood pressure, heart disease, diabetes and depression (American Sleep Apnea Association, n.d.). People with sleep apnea are also more likely to develop type 2 diabetes and more likely to have abnormal liver function tests (Mayo Clinic, 2015).

### *Effective Critical Incident Stress Management Techniques*

Utilizing practices, such as debriefing, counseling, and training, could aid emergency managers as they process each incident. From an institutional perspective, effective CISM could improve an organization's resiliency (Müller-Leonhardt et al., 2014). Disasters and emergencies effect communities through emotional reactions. These reactions can start small as normal stress incidents or link to post-traumatic stress disorder.

One of the most common CISM techniques is debriefing. Developed by Jeffrey Mitchell in 1982, Critical Incident Stress Debriefing (CISD) is a means of dealing with CIS. Mitchell (2008) stated CISD consists of a seven-phase intervention process and is best utilized in small groups where individuals have witnessed a highly traumatic situation. Moreover, the model is influenced by: military experiences, police psychology, emergency medical services, and disasters (Kowalski, 1995).

The two main goals of debriefing are:
- (1) identifying the impact of distressing critical incidents
- (2) accelerating the recovery from those events before harmful stress reactions have a chance to damage personal and professional lives (McEntire, 2015).

These goals can be accomplished via four stages (Kowalski, 1995) or seven steps (Tables 5 and 6) (Humphries & Carr, 2001; Mitchell & Everly, 2000; Pender & Pritchard, 2009). It uses early intervention, group support, health education, follow-up assessments, and cathartic ventilation, which is the open expression of strong emotions. CISD is widely recognized and popular because of its perceived effectiveness and efficiency since its early development (Everly, Flannery, & Eyler, 2002). However, it remains unclear which of the many debriefing components have the most impact (Sattler, Boyd, & Kirsch, 2014).

**Table 5.** *Stages of a Critical Incident Stress Debriefing* (Kowalski, 1995)

| Stages | Description |
|---|---|
| Stage 1 | Pre-Incident – understanding stress factors before the scene |
| Stage 2 | During an Incident – during or the first 12 hours after leaving the scene |
| Stage 3 | Post-Incident – around 24 hours after the event |
| Stage 4 | Follow Up – participation in closure following the 24 hour period |

**Table 6.** *Steps in a Critical Incident Stress Debriefing* (Humphries and Carr, 2001; Mitchell & Everly, 2000; Pender and Pritchard, 2009)

| Steps | Description |
|---|---|
| Step 1 | Introduction - establishing ground rules, confidentiality and purpose of the group |
| Step 2 | Facts - where participants outline the facts and share their connections to the events |
| Step 3 | Thoughts - where participants now start to transfer from factual information to sharing their emotional thoughts about the event, which may conflict with the thoughts of other group members |
| Step 4 | Feelings - where participants are encouraged to more deeply expose their reactions and experiences related to the event, fostering a bond with their group |
| Step 5 | Symptoms - where participants disclose changes or symptoms they have noticed since the event |
| Step 6 | Teaching - where facilitators teach coping strategies, help normalize the symptoms observed, and help manage the traumatic memories |
| Step 7 | Re-entry - a summary and lessons-learned exercise and acknowledgement of the human element of the people involved and their work |

The model has been reinforced by consistent application over many years and has shown itself to be both reliable and effective. Trained mental health professionals, along with peer members of the organization, can implement the model's steps and encourage detailed discussions of the incident, coping strategies and the provision of education about managing reactions, and help with re-entry to everyday life (Tuckey & Scott, 2014). Gibbs and Montagnino (2004) suggest emergency workers are more likely to seek out help and counseling (debriefing) resources from peers, rather than from trained counselors or psychologists. This is largely due to the perceived stigmatizing effect of seeking professional helping services, even in dealing with symptoms of PTSD. Research also suggests treatment provided by trained disaster workers are as effective, if not more so, than those provided by psychologists (Gibbs & Montagnino, 2004). Female disaster workers are more likely to seek resources among peers for CISD because of their likelihood to network and share feelings.

With respect to social support, the literature is nearly unanimous in finding strong social support, including caring attachments from colleagues and managers, can help offset some of the trauma of CIS. As highlighted in Table 7, the literature supports using peers as the most effective CISM technique (Jeannette & Scoboria, 2006; Ussery & Waters, 2006; Jahnke et al., 2014). This can be accomplished through peer counselors, peer counselor operated hotlines, and training peers to become attentive and responsive to fellow emergency management staff during routine tasks.

**Table 7.** *Summary of Effective Critical Incident Stress Management Techniques*

| Source | Technique |
|---|---|
| Jeannette & Scoboria (2008) | • Have the individual's social network involved during the healing process.<br>• Include formal confidential process, such as one-to-one debriefing in which a peer counselor approaches fellow colleagues to determine if they are a "hot spot" needing further medical and psychological treatment.<br>• As the severity of the CIS increases, so should the formality of the debriefing process. |
| Ussery & Waters (2006) | • Use of peer counselors who speak the jargon of the troubled callers and could easily identify the terms and nature of the work, which quickly built a rapport with the caller and secured help for the individual. |
| Greenbaum (2006) | • Broad use of therapy dogs and Animal Assisted Crisis Response in the field has resulted in improvements in establishing rapport, building bridges, and facilitating discussions. The animals act as symbols and by shifting the focus of attention from the individual. |
| Jahnke, Gist, Poston, & Haddock (2014) | • Use of trained peers to become attentive, responsive, and supportive of one another throughout the working environment. This helps to build a supportive organizational culture while executing routine task and job duties.<br>• Study results conclude that new culture made assistance more accessible and lessened the stigma associated with needing help.<br>• Casual crew debriefing, which is done all together as a unit through informal processes, including conversations on the ride home or during a lunch break. |
| Avraham et al. (2014) | • Performing compensatory acts serves as a CISM technique for paramedics. This entails attending a patient's funeral, comforting the family, or visiting patients at the hospital, which evoked positive emotions among the paramedics. |
| Cardinal (2015) | • Similar to debriefings, defusing is confidential and voluntary, and provides an opportunity for individuals to learn about stress, share thoughts, feelings, and emotions after the incident. Less formal than a debriefing, it is best conducted within one to four hours of the incident and it should last between 30 to 60 minutes.<br>• Critical incident adjustment support is a CISM technique performed when people lend their support to others as a means to assist in terms of coping with an incident or a death. Typically, critical incident adjustment support is accomplished by talking through incidents and being open to dialogue.<br>• Pre-crisis education prepares individuals to better handle stress incidents, and includes workshops, seminars, employee handbooks, or even e-books. This prevention technique is used to develop coping skills should an incident occur, as well as provide education on incident awareness and crisis response strategies. |

*Summary of Findings*

There is a clear relationship between critical incidents, ensuing stress, and the need to effectively debrief and handle the stress. By understanding the relationship between these attributes, emergency managers and first responders can manage and function at peak levels. What is less clear is how effective means of coping are determined. The literature is mixed in that regard. However, there are several principles that seem to emerge.

- There needs to be some degree of deference given to individual responses and provide resources for counseling services.
- There is compelling evidence to suggest PTSD will result where certain conditions exist, such as situations where there is uncertainty of outcomes, where disaster workers work with dead bodies and body parts, or when a disaster is particularly lengthy.
- Women are more likely to be effected by PTSD and are more likely to seek resources to mediate their conditions (Gibbs, 2004).
- Emergency managers can suffer stress at higher levels compared to first responders.
- Emergency workers, as well as emergency managers, can suffer physical, cognitive, emotional, and behavioral effects of stress.

# Recommendations

Based on the literature and findings, we present the following recommendations for practice and future research.

## *Recommendations for Practice*

- Enhanced availability to Employee Assistant Programs (EAP) for continued access to counselors or any social service staff. Organizations must market these programs to employees without stigma of labeling. This service provides a safe place to discuss post-event trauma and avoid relapse that might lead to PTSD. Additionally, EAP can map the needs of emergency management staff who are suffering with acute stress disorders, and in the times of emergency events provide services as needed.
- Reduce the stigma associated with seeking help for CIS exposure by emergency management staff by embedding CISM techniques and prevention into job roles and making it a priority of the organization.
- Local emergency managers should be legally classified as a "high-risk" population. CIS can trigger PTSD in some individuals. Considering many emergency managers and staff have military experience, they could be more susceptible to increased effects of CIS and PTSD.
- An awareness campaign of the occupational hazards and effects of CIS be implemented to all emergency management staff across the country.
- Multiple CISM techniques should be employed to account for generational, gender, and cultural differences. The shifting demographics may alter the way we understand how CIS effects the local emergency manager.
- CISD is best if provided by peers. Therefore, we recommend institutionalizing CISD and CISM best practices, as detailed in this report, in emergency management organizations. We recommend a shift in organizational culture to allow for additional opportunities for emergency management directors and staff to engage in peer-to-peer techniques. These could include creating/allocating informal spaces for downtime or conversations, and implementing mentoring programs for junior through senior level staff.
- Increased staff and unit size for CISM units, which can be accomplished by legislation requiring mental health licensed (and other licensed social service practitioners) practitioners to register and complete volunteer hours during an emergency or disaster.
- Mandate education and experience requirements for entry into leadership positions within emergency management, which will provide trained, adaptable personnel who are capable of handling high-level stress incidents. These individuals could then provide training and mentorship to staff.
- Require CISM training in the Associate and Certified Emergency Manager application process.
- Add CISM as a core competency in emergency management and homeland security higher education programs, especially with an increase of new emergency management personnel entering the work force with limited practical field experience.

- FEPA should continue working in a collective effort to identify CISM techniques that are most suitable, perhaps embracing peer-to-peer and animal-assisted therapies that complement the Mitchell model.
- Leaders managing the crisis should institutionalize mechanisms to monitor the number of hours worked by staff during an emergency or disaster. Excessive long hours will lead to burnout, effect the physical and emotional well-being, and create unnecessary stress – all of which can decrease the team's performance.

*Recommendations for Future Research*

Critical incident stress of emergency management directors and staff in the United States is not well researched and should be in order to prevent mental, emotional, behavioral, and physical harm. Including emergency managers in the first responder field could yield additional resources for emergency managers. Given an emergency manager's multiple roles before, during, and after traumatic events and contact with numerous systems, additional research with this population is essential. Data on the effects of CISM on emergency managers and the profession is also needed.

- We recommend conducting a national survey on emergency managers to collect data on the perception of CISM by staff at all levels; institutionalization of best practices; the physical, cognitive, emotional, and behavioral effects; and demographic information. The survey should utilize the Dillman (2007) approach to survey design and dissimilation with Likert scale and open-ended questions.
- For richer data collection, we also recommend completing semi-structured interviews with some emergency managers and staff to add a voice or narrative to the quantitative data.

# Conclusion

Critical incident stress a very serious condition having significant impacts. Multiple physical, cognitive, emotional, and behavioral symptoms of stress interfere with the individual's ability to physically and mentally perform their duties. Although the severity of CIS differs between individuals, studies show that a disproportionate portion of the emergency management and first responder personnel experience it at least once in their careers. It is critical these occupations be classified as high risk and those occupying these positions readily know their occupational hazards.

By reflecting on the demographic information, types of stress, and medical issues related to stress, it is evident all emergency management positions need CISM techniques. Continuing to marginalize this issue could contribute to the afflicted personnel and their decision to leave their position, while potentially increasing vulnerabilities of staff members, organization, and community.

A review of the literature reveals a largely homogenous profile for emergency managers, with the profession dominated by Caucasian men over the age of 40, many of whom with military or first responder backgrounds. However, recent demographic studies show the face of the profession is rapidly changing. The next generation of emergency managers will likely be more diverse, more educated, and will continue the professionalization of the field of emergency management.

The stress experienced during an emergency or disaster is exacerbated by the long work hours performing mentally and physically demanding tasks. Often there is little time available for proper rest and recovery, and exhaustion then becomes a stress compounder. Additionally, emergency managers may be reluctant to leave their workstation for fear the situation will spiral out of control in their absence. Even when the situation ends, emergency managers may experience stress reintegrating into the mundanity and bureaucracy of everyday life. In addition to the recommendations provided in this report, emergency managers should receive proper rest and nutrition, and maintain awareness. Other suggestions include avoiding abuse of drugs or alcohol, exercising regularly, reaching out to others, and doing activities one enjoys (CDC, 2013).

From this research, it is clear local emergency managers are at high risk for experiencing CIS. Not only do emergency managers experience the same types of stressors first responders' experience, but also their stress is exacerbated through their roles and responsibilities. Local emergency managers face special conditions, such as extended work hours during emergencies and disasters, the need to be particularly alert during press conferences and in meetings with elected officials and other community stakeholders, and the need to manage public expectations.

## *Research Limitations*

Unfortunately, the literature concerning the effect of CIS on emergency managers is sparse. The role of the emergency manager has not been thoroughly investigated; thus, research found from the current literature may not be completely representative of the profession as a whole. Therefore, it is unknown whether CIS increases the desire to exit the emergency management field following a disaster, influences the average life expectancy, the average number of hours worked during an emergency/disaster, and the average number of disasters/emergencies worked.

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# Appendix A

## Database Search Terms

| Terms for Critical Incident Stress | Terms for Emergency Manager Demographics | Terms for Types of Stress | Terms for Medical Issues Related to Stress | Terms for Critical Incident Stress Management Techniques |
|---|---|---|---|---|
| • Critical incident stress<br>• What is critical incident stress<br>• Emergency management critical incident stress | • Emergency manager burnout<br>• Emergency manager demographics<br>• Emergency manager experience in field<br>• Emergency manager workload<br>• First responder early death<br>• Life expectancy emergency manager<br>• Occupational hazards<br>• Emergency manager<br>• Prior experience<br>• Reasons to leave<br>• Emergency manager job responsibilities<br>• Emergency managers resign<br>• Emergency managers retirement<br>• Emergency manager early death<br>• Emergency manager quit<br>• Post disaster emergency manager<br>• Cons to emergency manager position<br>• Emergency manager death<br>• Emergency manager schedule<br>• Emergency managers that leave the field<br>• Emergency manager age<br>• Threats to emergency manager longevity<br>• Average hours worked emergency manager<br>• Number of disasters worked emergency managers<br>• Exiting field<br>• Hours worked in disasters emergency manager | • First responder stress<br>• First responder workload<br>• Emergency management stress<br>• Occupational hazards first responder<br>• What kinds of stress do first responders feel<br>• Occupational stress<br>• Disaster workers | • First responder health risks<br>• Physiological risks first responder<br>• Physical risks<br>• First responder<br>• Physical risks emergency manager<br>• Medical issues for emergency managers<br>• Physiological risks<br>• Emergency manager<br>• Health risks<br>• Health concerns first responders<br>• Sleep apnea | • Critical incident stress management techniques<br>• Critical incident stress debriefing<br>• Critical incident stress management<br>• Treatments for critical incident stress |

# Appendix B

**Comprehensive Emergency Manager Demographic Information**

| Source | Population Studied | Number of Respondents | Demographic Information | | | Average Number of Previous Disasters/ Incidents Worked/ Years of Experience |
|---|---|---|---|---|---|---|
| | | | Age | Gender | Ethnicity | |
| Cwiak, Cline, & Karlgaard (2004) | Comparison between national emergency managers and rural emergency managers | 81 IAEM respondents; 43 North Dakota respondents | IAEM respondents average age of 46; North Dakota respondents average age of 51 | 79% of IAEM respondents were male and 21% female; 67% male and 33% female for North Dakota respondents | 87% of IAEM respondents identified as Caucasian; 95% of North Dakota respondents identified as Caucasian | 50% of IAEM respondents involved in five or more major disasters; 50% of North Dakota respondents involved in three or more major disasters |
| Grist (2007) | U.S. emergency management officials in IAEM | 237 | 75.2% of respondents were 45 and older | 79.3% reported being male and 20.7% female | 95.3% identified as Caucasian | Averaged 15 years of experience |
| Kapucu, Berman, & Wang (2008) | Florida emergency managers | 65 | 39% of respondents were younger than 45 years old, 35% were between 45 and 54 years old, and 25% were older than 55 | 72% respondents reporting being male and 28% female | Not specified | 7.6 years of emergency management experience |
| Van Wart & Kapucu (2011) | U.S. emergency management officials | 17 | Majority of respondents were between 35 and 65 years of age | 82% of respondents to be male and 18% female | Not specified | Respondents involved in an average of 3.8 nationally recognized disasters |

| Source | Population Studied | Number of Respondents | Demographic Information | | | Average Number of Previous Disasters/ Incidents Worked/ Years of Experience |
|---|---|---|---|---|---|---|
| | | | **Age** | **Gender** | **Ethnicity** | |
| Peerbolte & Collins (2013) | Commonwealth of Virginia emergency managers | 54 | Age ranged between 25 and 69 years of age, with the largest percentage (n=37%) falling in the 50-59 age range. | 72.2% reported being male and 16.8% female | Not specified | 52.1% of the respondents had 15 or more years of experience |
| Weaver, Bruan, Miller, Cox, Griffith, & Mazur (2014) | U.S. emergency managers | 1,062 | 72% of respondents reporting to be older than 45 years old | 80.8% reported being male and 19.2% female | 94% identified as Caucasian | 37% of the respondents were emergency manager for more than 10 years |