Mitigation of social stress from critical incidents

Danny Peterson, PhD, CEM

“A danger foreseen is half avoided.”

INTRODUCTION

In the last 30 years, we have experienced many devastating disasters that were responsible for the deaths of hundreds of thousands of people, including the collapse of the Shimantan dam in 1975, Chernobyl in 1986, Bhopal in 1984, and the collisions of two jumbo jets at the Tenerife airport in 1977. These disasters have one commonality—they were not intentional. A recent disaster whose magnitude has been staggering is the terrorist attack on the World Trade Center (WTC) and the Pentagon. This was intentional.

The horrific images of the World Trade Center towers collapsing into themselves are etched into the minds of virtually every American. On that fateful morning of September 11, 2001, most of America was glued to the television watching the disaster unfold. It was a surreal experience that was more like a B-grade movie than an actual disaster. The aftermath and tedious recovery preoccupied the minds of many. The subsequent anthrax attack sent chills up the spines of everyone and scared many healthcare professionals to the point that some were hoarding ciprofloxacin as their own first-line defense.

Terrorism comes from the Latin word terrere, which means to frighten. The terrorists have certainly achieved that goal in its simplest form, since many Americans still fear venturing into public forums or using public transportation. In its simplest terms, terrorism is psychological warfare.

Tangible effects of terrorist events are clearly evident. One impact that is often not evident or is neglected is the psychological toll. Though it is standard procedure for most first responders to attend some form of critical incident stress (CIS) debriefing following particularly gruesome events, they are not the only ones at risk of some psychological response similar to post-traumatic stress syndrome. In fact, a case can be made that first responders and healthcare providers might be more capable of dealing with CIS than the average citizen. It is the impact on the average citizen who did not witness the event in person that is the focus of this paper.

Following the September 11 tragedy, the disaster was replayed hundreds of times on national television. The images were burned over and over again into the minds of citizens around the world. Fear of the unknown reached pandemic proportions. But what is different about the WTC disaster and other disasters is the sheer magnitude of media coverage that reinforced the image time and time again. In the minds of many viewers, this disaster occurred 100 times when in reality it happened but once.

We do not know precisely how this experience will affect the psyche of many Americans as well as others around the globe. Research suggests there will be manifestations in terms of maladaptive behavior. The basic premise of critical incident stress management (CISM) is that forewarned is forearmed (Cervantes), or a danger foreseen is half avoided (Fuller). At the heart of CISM is the CIS debriefing, which though it has many goals, attempts to make victims aware of potential symptoms so that these symptoms can be addressed rather than suppressed. This paper will provide a brief history of critical incident stress syndrome, take a look at current approaches to managing CIS, and finally offer some suggestions or options for generalizing some CIS-related techniques to the public at large. It is hoped that addressing CIS and the effect it has on our social fabric will pay dividends in terms of mitigating some potential socially maladaptive responses.
HISTORY OF CIS

Roots of psychological disorders following exposure to critical incidents dates back to before the Civil War. Sigmund Freud observed a disproportionate incidence of various psychoses among patients returning from World War I. Going by various names, the phenomenon was first included in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* in 1980 and dubbed post-traumatic stress disorder (PTSD). Post-traumatic stress disorder is the fourth most common psychiatric disorder in the United States, especially following such events as rape, molestation, physical assault, accident, natural disaster, combat, death or injury, or learning about such events.

The use of the term CIS evolved in recent years as a nonmilitary analog to PTSD. Critical incident stress syndrome (CISS) is a broad concept used to describe collective signs, symptoms, and various maladaptive manifestations following exposure to a critical incident. Different people react differently to identical situations based upon individual interpretations. For example, one person may faint at the sight of blood, whereas another, a surgeon, sees blood only in terms of biological function. CISS is not the event, but the impact the event has on individuals’ behavioral and emotional health. “An underlying assumption of CIS is that the stress response is a normative reaction to a difficult situation.”

Events that can trigger CISS are manifold, but include natural as well as manmade disasters. Technological disasters are considered manmade and include such events as the space shuttle Challenger as well as the terrorist attacks of September 11.

The midair explosions of the space shuttles Challenger and Columbia and the September 11 disasters shocked the nation. Though there are many definitions for critical incident, one offered by Mitchell and Everly is any event that can exert such a stressful impact so as to overwhelm an individual’s usual coping mechanisms. There are various categorization models, one of which is presented by the International Critical Incident Stress Foundation (ICISF). ICISF categorizes responses in one of four groups: physical signs and symptoms, cognitive signs and symptoms, emotional signs and symptoms, and behavioral signs and symptoms. Some specific examples follow:

- **Physical signs and symptoms:** chills, thirst, nausea, fainting, dizziness, weakness, chest pain, headaches, elevated blood pressure, rapid heart rate, muscle tremors, shock symptoms, grinding of teeth, visual impairment, profuse sweating, difficulty breathing, etc.

- **Cognitive signs and symptoms:** confusion, nightmares, uncertainty, hypervigilance, suspiciousness, intrusive images, poor problem solving, lack of attention and ability to make decisions, poor memory and distortion of time/place/person, heightened or lowered alertness, etc.

- **Emotional signs and symptoms:** fear, guilt, grief, panic, denial, anxiety, agitation, irritability, depression, intense anger, apprehension, emotional shock, emotional outbursts, feeling overwhelmed, loss of emotional control, inappropriate emotional responses, etc.

- **Behavioral signs and symptoms:** withdrawal, antisocial acts, inability to rest or sleep, pacing erratic movements, change in social activity, change in speech patterns, loss or increase in appetite, hyperalert to environment, increased alcohol consumption, etc.

CURRENT APPROACHES TO MANAGING CIS

Two terms are frequently used in describing intervention following a critical incident. These are CISM and community response teams (CRTs). CISM typically applies to intervention services for first responders, including firefighters, police, EMTs, and so on, and is a direct descendent of Mitchell’s early work. CRT typically refers to intervention services for groups other than the emergency responders that include victims, witnesses, bystanders, community groups, and school systems. Regardless of the focus, Mitchell says “effectiveness is assured by careful planning, protocol and procedure writing, as well as team member selection, training, and practice.”
Most approaches to CISM are based upon the Mitchell model. Mitchell developed this model based upon his experience as a firefighter and paramedic. He believed that the approach should be logical, systematic, and multicomponent and should focus on intervention with distressed emergency personnel. Intervention is applied through defusing or debriefing, which attempts to lessen the impact of CIS. Defusing is typically a less formal, short, and to-the-point process led by CISM-trained peers. The more formal CIS debriefing is conducted by a specially trained team 24 to 72 hours following the incident. In its most generalized form, a debriefing is a "planned structured group activity, organized to review in detail the facts, thoughts, impressions, and reactions following a critical incident as well as providing information on typical reactions to critical events. It aims to prevent unnecessary aftereffects, accelerate normal recovery, stimulate group cohesion (in work groups or natural groups), normalize reactions, stimulate emotional ventilation, and promote a cognitive 'grip' on the situation."9

The importance of the timing of intervention following a stress event is fairly well documented. Debriefing of Israeli soldiers immediately following battle during the 1982 Lebanon War reduced the occurrence of post-traumatic stress by 60 percent. Campfield and Hills11 conducted an experiment with 77 participants recruited from the National Trauma Clinic in Sydney, New South Wales. They were randomly assigned to two groups. One group received immediate (< 10 hours) CIS debriefing using the Mitchell model, and the second group received a delayed CIS debriefing (≥ 48 hours). The immediate-debriefing group had significantly fewer post-traumatic stress symptoms as well as less severe symptoms than were common with the first group.

CISM has evolved from various roots but is currently synonymous with Mitchell and Everly’s work. The CISM is based upon Mitchell’s seven-step model.12

1. Preincident education/mental preparedness training

2. Individual crisis intervention

3. Demobilization after disaster or large-scale events

4. Defusing or brief small group discussions

5. CIS debriefing or longer small group discussion, which is a formal debriefing following Mitchell’s model

6. Family crisis intervention procedures

7. Referrals for follow-up assessment or treatment

Mitchell and Everly12 categorize interventions according to three main areas:

1. Interventions for the individual:
   a. general stress management education
   b. mental preparedness training
   c. on-scene support
   d. individual crisis intervention support
   e. referrals for psychotherapy

2. Interventions for groups:
   a. preincident education
   b. defusings
   c. demobilizations during disaster operations
   d. CIS debriefing
   e. follow-up meetings

3. Interventions for the environment:
   a. support for families
b. organizational support (consultations to management, developing organizational commitment to stress management, e.g., screening of personnel, proper training, stress management education, good management practices)

c. community support (outreach, education, crisis counseling and referrals)

Another organization that addresses CIS is the National Organization for Victim Assistance (NOVA). NOVA was created in 1975, and its purpose is to provide crisis counseling for high-profile tragedies such as the Mount St. Helens eruption in 1980, the Air Florida crash in the Everglades in 1982, the Korean air tragedy of 1983, the Mexico earthquake of 1985, the Jeffrey Dahmer serial murders, and the Kobe, Japan, earthquake of 1995. NOVA is a nonprofit organization that provides skilled volunteers who deploy, when requested, to provide immediate crisis counseling and intervention services to a wide array of victims, including responders, public safety individuals, and others affected by the critical incident. NOVA employs a seven-element debriefing process based upon the Mitchell model.

APPLYING CISM TO PUBLIC AT LARGE

Literature suggests that critical incidents such as disasters and terrorist events impact not only individuals, but the community as well. Disasters, violence, and terrorism undoubtedly contribute to large-scale psychological morbidity. Psychological casualties have the potential of outnumbering physical casualties not only in wars, but in disasters and terrorism events as well.

A study conducted following September 11 found that 1,008 adults, or approximately 7.5 percent of those living south of 110th Street in Manhattan, exhibited symptoms of PTSD, and 9.7 percent had symptoms consistent with depression. The results published in the New England Journal of Medicine stated that such prevalence suggests that 67,000 persons in this area had PTSD and 87,000 had depression. These results were compared to a benchmark

How children cope with critical incidents

Catastrophes such as earthquakes, hurricanes, tornados, floods, or violent acts, are frightening to children as well as adults. False minimizing the danger will not end a child’s concerns. Several factors affect a child’s response to a disaster:

- The way children understand their parents’ responses. Children are aware of their parents’ worries most of the time, but they are particularly sensitive during a crisis. Parents should admit their concerns to their children, and also stress their abilities to cope with the situation.
- The amount destruction or death he or she is exposed to. If a friend or family member has been killed or seriously injured, or if the child’s school or home has been severely damaged, there is a greater chance that the child will experience difficulties.
- The child’s age. Six-year-olds may refuse to attend school, while adolescents minimize their concerns but argue more and show a decline in school performance.

Parents and professionals should be alert for the following changes in a child’s behavior:

- Refusal to return to school and “clinging” behavior
- Persistent fears related to the catastrophe
- Sleep disturbances such as nightmares or bed-wetting persisting more than several days
- Loss of concentration and irritability
- Behavior problems in school or at home
- Physical complaints (stomach- or headaches, dizziness) without a physical cause
- Withdrawal from family and friends

Professional treatment for children affected by a disaster—especially those who have witnessed destruction, injury, or death—can help prevent or minimize CIS. Ask the pediatrician or family doctor for a referral to a pediatric psychiatrist.

(Source: American Academy of Child & Adolescent Psychiatry, Fact Sheet #36, May 2000.)
national study that found baseline values were 3.6 percent for PTSD symptoms and 4.9 percent for depression. As can be seen, the prevalence of PTSD and depression following September 11 doubled for this population. Galea et al.\textsuperscript{16} concluded that “In the aftermath of terrorist attacks, there may be substantial psychological morbidity in the population.”

The Office of National Drug Control Policy (ONDCP) reported that new prescriptions for several drugs increased sharply between September 11 and early October 2001.\textsuperscript{17} These increases included benzodiazepines that increased 11 percent nationally, 14 percent in Washington, DC, and 23 percent in New York City. Similar increases were noted for antidepressants and sleep aids.\textsuperscript{17} An interesting aside was noted—a decrease in illegal drug availability and changes in trafficking patterns and marketing strategies. This most likely was a direct result of increased security following September 11.

In another study following September 11 that was conducted nationwide, Schuster et al. reported that 44 percent of the adult sample reported one or more substantial symptoms of stress, and 90 percent had one or more symptoms to at least some degree.\textsuperscript{18} Most interesting about this study were the various means of coping that were reported, including talking to others (98 percent), participating in group activities (60 percent), and making donations (36 percent).

Other salient results of this study pertain to nonadults. Eighty-four percent of the parents or other adults in a household had talked to their children about the attack for an hour or more, and 36 percent restricted their children’s television viewing. This study also highlighted the impact of September 11 on children. Thirty-five percent of the children had one or more stress symptoms, and 47 percent were concerned about their own safety.

Most significant to this paper was the fact that while persons who directly witnessed a traumatic event often reported symptoms of stress, adults and children not present can also have stress symptoms.

In 1972, the National Academy of Sciences stated that emergency medicine is one of the weakest links in the delivery of healthcare in the nation. Delivery of psychiatric care in the United States is limited to short-term use unless patients exhibit clinically debilitating illnesses. Preventive care should be a part of our system especially as it applies to mitigating CISS.

There are questions about correlations and prognostic factors between natural disasters and events involving violence. Goenjian et al.\textsuperscript{19} conducted a comparative analysis between victims of the 1988 Armenian earthquake and victims of the bloody pogroms perpetrated against Armenians in Azerbaijan beginning in February 1988. They discovered little difference in measured PTSD symptoms (intrusion, withdrawal, and arousal) between the groups.

The following is presented, not as a panacea for alleviating potential social stress reactions to national critical incidents, but merely a start to create an awareness of a potential threat to the wellness of our nation. It provides at best a straw man on which discussion and further debate can be focused. The model presented contains three separate yet interrelated components:

- Preincident conditioning
- Transincident coping
- Postincident follow-up

**PREINCIDENT CONDITIONING**

This component is what Everly and Mitchell\textsuperscript{20} refer to as psychological immunization. First and foremost is a psychoeducational program. Indirect evidence suggests that pretraining for a stressful experience may enhance coping.\textsuperscript{4,7} Seeds of distrust, anxiety, social paranoia, and defensive aggression are planted and nurtured by violent acts such as terrorism.\textsuperscript{21} Effective preincident conditioning should involve, at a minimum, a public information campaign that educates the entire population in this area. This should help average citizens realize that terrorists’ attacks are not targeting citizens personally but rather are attacking general institutions and social icons.

This education program must accurately portray risk. The recent public outcry that the government was withholding credible threat information was supplanted by providing too much threat information, which results
in indifference like that of the boy who cried wolf too many times. Historically, risk communication has been what the public is told about risk.\textsuperscript{22} If not communicated effectively, the communication of the threat and risk of terrorism can contribute to the aforementioned seeds of distrust. The citizens can and will distrust the government in terms of valid threat definition and assessment. Risk communication to the public must be based on a rational framework that involves a dynamic, two-way exchange between the government and the public at large.

**TRANSINCIDENT COPING**

In general terms, mentally surviving an event such as September 11 requires more than just psychological preparation. Mitchell and Everly’s model includes a systematic, planned, and multicomponent approach that involves defusing, debriefing, and referral.\textsuperscript{12} While these all appear to work well with CISM for first responders, a wider approach needs to be taken for society at large.

Every individual has a different reaction to a critical incident, yet there are also many shared responses. Some factors that influence responses include:\textsuperscript{21}

- Ethnocultural traditions, beliefs, and values
- Community practices, norms, and resources
- Family heritage and dynamics
- Individual sociovocational resources and limitations
- Individual biopsychosocial resources and vulnerabilities
- Prior exposure to traumatic experiences
- Specific stressful or potentially traumatic experiences during or since disaster

Because of these wide and varied factors, a very generic, yet encompassing, approach must be taken that eases acute response to an incident and mitigates potential subsequent maladaptive responses. Whatever the approach, it must be institutionalized rather than amorphous. Perhaps this can be addressed in the newly developing Office of Homeland Security.

Everly and Mitchell\textsuperscript{24} state “Without attention to the ‘psychological side of terrorism,’ we run the risk of rebuilding a city without a spirit, without a soul, without a sense of humanity.” They offer ten recommendations for addressing the psychological consequences of terrorism:

1. Never lose sight of the fact that, either as a primary or secondary goal, the terrorist act is designed to engender psychological instability.

2. Establish crisis intervention hot lines and walk-in crisis intervention facilities in every community directly or indirectly affected.

3. Provide to emergency response personnel preincident psychological resiliency training, as well as ongoing psychological support during and after the terrorist attack.

4. Collaborate with mass media services to provide ongoing information to all involved and affected populations.

5. Take whatever steps seem requisite to re-establish a sense of physical safety for the public.

6. Enlist the support of local political, educational, medical, economic, and religious leaders to facilitate communications, calm fears, provide personal crisis intervention (if adequately trained to do so), and instill hope.

7. Re-establish normal communication and transportation, school, and work schedules as soon as possible.

8. Understand and use the power of symbols as a means of re-establishing community cohesion. Flags, bumper stickers, signs, and billboards can all be effective.
9. Initiate rituals to honor the survivors, honor the dead. Provide opportunities for others, not directly affected, to assist those directly affected (e.g., donations of blood, food, clothing).

10. Do no harm!

Everly and Mitchell’s last point is well taken. The improper timing or use of psychological intervention can actually be counterproductive. Bowenkamp makes a strong point that since disasters impact the entire community, the response must be a collaborative community effort.

Flannery and Everly offer five principles for crisis intervention following a psychological trauma or PTSD:

1. Intervene immediately.

2. Stabilize.

3. Facilitate an understanding of what has occurred.

4. Focus on problem solving. Actively assist victims to use available resources to regain control.

5. Encourage self-reliance. Akin to active problem solving is the emphasis on restoring self-reliance in victims as an additional means to restore independent functioning and to address the aftermath of traumatic events.

In the 1960s, John F. Kennedy realized the declining level of physical fitness within our society and the threat it posed to national security. He mobilized the nation in a blitz toward enhanced physical fitness that was successful at the time. George W. Bush is currently stressing the risks we take as a nation due to obese citizens, especially children. In a like manner, we must now deal with a new enemy: a threat posed today by citizenry unable to accommodate in an adaptive manner to stresses resulting from various national critical incidents such as September 11. Whatever the approach, it must entail transactional leadership that stresses national hope and visions of a better society made possible by the sacrifices of primary and secondary victims.

**POSTINCIDENT FOLLOW-UP**

Patterns emerge that many responders and clinicians experience following a critical incident. A four-phase model presented by Young, et al includes:

- **Heroic**
- **Honeymoon**
- **Disillusionment**
- **Restabilization**

The heroic phase includes direct response, including rescuing, sheltering, and emergency repair. The honeymoon phase is a period of inflated optimism when donations and help are flowing in from multiple sources. The disillusionment phase sets in when fatigue peaks and the daunting task of recovery becomes evident. The billions of dollars that will be spent on homeland security following September 11 will be a source of disillusionment, especially in terms of the effect it will have on our economy and national deficit.

The final phase is restabilization. This is the primary focus of postincident actions to mitigate maladaptive psychological responses. It is during this stage that threats are redefined and assessed. Whether the critical incident was a dam collapse or a terrorist attack, loss of life, property, or environmental destruction reveals a weakness in our preparedness posture. It is during this phase that we must re-evaluate threats and sources of potential disaster and take steps to mitigate the same. Our nation’s airports have probably never been safer than they are today.

We currently have a tremendous infrastructure for recovering from various disasters through the Federal Emergency Management Agency (FEMA, which is now a part of the Department of Homeland Security), the Red Cross, and others. Our institutionalized disaster relief efforts have proved very effective in handling response and recovery following many disasters. We are on new
ground today, however, following September 11. As part of our restabilization phase, we must take steps to protect the psychosocial health of our country. This is not just a matter of doing the right thing to alleviate mental suffering; it is a matter of being prepared for a new enemy, and this ultimately speaks to national security. The defense of our country has traditionally been a mission for the Department of Defense. Domestic security has typically been addressed by our criminal justice system. Dealing with terrorism within our shores has gone beyond institutional treatment until now. The newly created Department of Homeland Security is designed to address this ideological loophole.

SUMMARY

This paper has summarized the concepts of PTSD and CISM. It has presented a cursory history of CISM and current applications. Most applications, however, focus on first responders, closely related response professionals, and direct victims. Our society in general can suffer from corollary reactions to critical incidents that impact us individually as well as nationally. The discussion has presented some suggestions for applying, on a wider scheme, some general approaches found in CISM and PTSD treatment to mitigate maladaptive responses to critical incidents in general and terrorist attacks specifically. Being prepared for psychological assaults on our society is not merely a matter of humane concern for generalized suffering, but also a matter of national security. Whether the toll of a disaster or terrorist attack is material or psychological, in the end, either or both erode our preparation for survival. It is hoped that this paper will raise the level of awareness the threat of CISM and PTSD pose to our country and will catalyze dialogue for increasing disaster preparedness.

Danny Peterson, PhD, CEM, Associate Professor, College of Technology and Applied Sciences, Arizona State University, Mesa, Arizona.

REFERENCES